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THE UNIVERSITY OF ALBERTA

# A Systematic Investigation Of The KSD

by

Ⓒ JAC ANDREWS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF Doctor Of Philosophy

IN

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DEPARTMENT OF EDUCATIONAL PSYCHOLOGY

EDMONTON, ALBERTA

Fall, 1986

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The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled A Systematic Investigation Of The KSD submitted by JAC ANDREWS in partial fulfilment of the requirements for the degree of Doctor OF Philosophy in EDUCATIONAL PSYCHOLOGY.

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Date....August 18/86...

# ABSTRACT

The major aim of this study was to develop a systematic rating system in order to: (A) provide information regarding the individual and global characteristics of the Kinetic School Drawing (KSD), (B)document further normative data with respect to the actions, styles and content represented in school drawings, (C) record additional reliability data of the KSD, and (D) present quantitative and qualitative results so that the effectiveness of the KSD for differential assessment could be illustrated.

This study examined the Kinetic School Drawings (KSDs) of 96 learning disabled and non learning disabled grade five students.The KSD was group administered to these students by their teachers using standardized instructions and then collected from the teachers along with information related to the age, grade, classification, cognitive and reading ability of each student. The drawings were presented to two sets of trained raters who scored the drawings with the instruments designed for the purposes of this study.

The research design was taxonomic in that it was primarily oriented towards discovering, classifying and measuring graphic features of the KSD. By and large, this study involved the measurement of categorical variables which were cross-partitioned in order to study the relationship between them and tested for significance with Chi square statistics. The remaining continious variables were analyzed with one way analysis of variance.

The results of this study showed that instruments developed for the purposes of this study provided a systematic and consistent scoring approach for graphic variables. Additionally the results demonstrated that: (a) many of the graphic features represented by learning disabled children qualitatively and quantitatively differed from non learning disabled childrens' graphic representations, (b) all subjects drew school pictures that contained graphic indicators of maladjustment, however, the drawings differed in terms of type and degree of graphic significance, (c) graphic indicators of psychological conditions and global characteristics could be categorized and differentiate groups of children, (d) many indicators considered empirically and clinically significant in kinetic family drawings (KFDs) also appear either quantitatively or qualitatively significant in kinetic school drawings (KSDs), (e) many of the drawings contained human figure drawings with essential body parts missing which is consistent with the view that KSDs demand more attention to human activity then human form, (f) ratings of drawings reflected a more positive than negative trend with respect to global characteristics, (g) qualitative analysis revealed rare and common occurences of content,style, and patterns of interaction that were not clearly revealed through quantitative analysis which could reflect individual personality characteristics and clinical significance, (h) no barriers or desks and chairs as barriers appear to be common in KSDs and that their occurence seems related to the type of activity and content represented in drawings , and (i) content in KSDs is by and large associated with the school environment and appears to be a function of activity, placement and behaviour of the child.

Some major implications of this study were that a systematic investigation of projective drawing productions is only the first step towards making the KSD more accountable and applicable for school psychologists. The next step involves validating both the procedure and the results of this study and designing future research to deal with the many limitations of this study particularly in terms of generalization and interpretation. However, the results of this study provide support for continued research with the KSD and for its' clinical utility.

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# I. Introduction

One of the major requests of school psychologists and clinicians is to determine the social and emotional status of referred children However, there are very few tests or methods available for such an assessment. Presently, projective measures for assessment of social/emotional status as well as the overall personality of children seem to be favored by practitioners and are used more extensively than objective measures (Goh,et. al., 1981; Prout, 1983).

The general theory underlying projection is that the way a person is organized psychologically will determine the content and style of the persons' perceptions which can be reflected though projective techniques. Projective assessment is assumed to allow for more unique aspects of an individuals' personality due to its' unstructured, disguised and holistic nature (Maloney and Ward, 1980) and can be used to tap latent or unconscious processes (Hammer, 1958) that are generally not revealed in objective assessments.

The principles behind projection have been explained by a variety of suppositions such as stimulus-response theory, psychoanalytic theory, perceptual theory, gestalt theory and physiognomic theory, however, to date there is not one integrated projective theory. Nevertheless, as Hammer notes, the evidence from a variety of psychological theories along with the results from clinical and experimental studies provides an adequate basis for the assessment and interpretation of projective techniques (Hammer, 1958).

One of the most popular forms of projective assessment used by school psychologists is projective drawings (Vukovich, 1983). Projective drawings have been used by clinicians as a personality assesssment tool for over 100 years (Koppitz, 1968). Among the most popular projective drawing techniques are the Bender Gestalt test (Bender, 1946), Draw A Person (Machover, 1949), Draw A Man (Goodenough, 1926), House Tree Person (Buck, 1948), Draw A Family (Hulse, 1952) and Kinetic Family Drawing (Burns and Kaufman, 1970). These instruments provide information ranging from normal development and intelligence to identifying maladjustment and personality functioning.

One of the most recently developed projective drawing tests is the Kinetic Family Drawing (KFD) introduced by Kaufman and Burns in 1970. These authors included the demension of action in to drawings which was considered by them to be of assistance in understanding the family dynamics particularly with respect to family interaction. Essentially, the inclusion of action was seen as a way of assessing the child's position and relationship within the family. Interest in this technique stimulated the creation of the Kinetic School Drawing (KSD) introduced by Prout and Phillips (1974). The KSD was designed to deal specifically with the child's perception of his/her school situation. It was adapted from the KFD and is almost identically interpreted. The major difference is that the KFD attempts to assess a child's position and relationship in the family and the KSD attempts to assess a child's relative status within the school environment.

## A. The Importance of Studying the KSD

One of the major strengths of the KSD lies in its focus. The KSD seems to have good face validity for school related referrals and therefore potentially useful for school psychologists that deal with children who have school problems.

The KSD would seem to have the potential for becoming an economic and useful part of the psychologists' assessment battery. It appears to meet the preferrance of school psychologists to use quick and easy procedures (Goh. et. al., 1983) and provides a way for measuring social and emotional aspects of children which is considered by school psychologists as an essential component of assessment (Prout, 1983).

Another major strength of the KSD is that as a drawing technique it offers a way to observe children in a standardized environment. Additionally, many children prefer to represent their thoughts and feelings in drawings than to express their thoughts and feelings in writing or verbal form (Cummings, 1982). Furthermore, Hammer (1958) notes special advantages that drawings have over objective measures such as: (1) they are useful with the mentally defective, poorly educated, withdrawn children as well as with those of concrete orientation, (2) they tend to be less threatening for children, (3) they are simple to administer and take little time, (4) they are applicable to large groups, (5) they can get under the defenses that can be more easily controlled by verbal expression and (6) they are effective as a screening device and rapport builder.

Generally, any instrument that provides more information about how a child relates to his/her environment has value (Cummings, 1982) and because of projective drawings popularity and potential utility the KSD appears worthy of further research and development. However, regardless of their widespread useage (Obrzut, 1982) and apparent utility (Maloney and Ward, 1983) there are a number of inadequacies that need to be resolved with respect to projective drawings and particularly the KSD.

## B. Statement of the Problem

The KSD needs to be subjected to at least minimal standards of reliability before widespread useage can be justified. The KSD should be accompanied with appropriate evidence of validity and have a set of standards for scoring and interpretation. The lack of specific and verifiable scoring criteria cause serious problems for psychologists regardless of their experience and may result in dangerous misuse of the technique (Peterson, 1982). Related to this issue are a number of problems with the KSD such as: (1) the potential and systematic applicability of the KSD has not been adequately supported and demonstrated, (2) these are no

--clear cut rules for interpreting responses and no standardized scoring procedures provided, for example, some researchers have developed objective scoring systems for the KFD with satisfactory reliability estimates (Meyers, 1978; McPhee & Wegner, 1976; O'Brian & Patton, 1974), however, there are no such systems for the KSD, (3) most interpretations are subject to alternative speculations, (4) there is little information in terms of normative data particularly with respect to types of action, content and style represented in the drawings, (5) there is a significant absence of reliability and validity data, (6) there is no methodological approach for scoring or interpreting the drawings.

The application of the KSD is limited due to the absence of a reference guide or scoring manual and because of the preconceived notion that it takes decades of administrative and interpretive experience to use projective techniques such as the KSD (Wise & Potkay, 1982). To this point, Goldfried (1971) warns that "unless clinicians indicate their method, such studies yield no communicable information about the strengths and weaknesses of the techniques and variables" (p. 380). Additionally, there has been an overly qualitative approach to interpreting projective drawings which lends itself to subjective bias and limited generalization. A more balanced approach by using both qualitative and quantitative sources of information is needed (Potkay, 1971).

Since the inception of the KSD there has been only two reported studies that have researched its' effectiveness. Schneider (1977) conducted a validation study of the KSD and found that the results from scoring KSDs did not predict problems at school any better or add to the prediction of school problems achieved by age and IQ alone. However, he concluded that this did not mean that the KSD did not have any utility for the school psychologist. In 1984, Prout and Celmar reported that when they examined the relationship between KSD responses and academic achievement among normal elementary children, indicators of emotional conflict and negative affect were significantly related to achievement. Specifically low achieving students tended to draw smaller teacher and self figures, included more peers in their drawings, put more space between themselves and both peers and teachers, produced drawings with a higher number of emotional indicators and tended to portray themselves in non academic and/or undesireable activities with the opposite tendency for high achieving students.

Two major problems can be identified from the review of these two studies. First, both studies did not provide elaborative information in terms of how the investigators scored the drawings in their study which creates problems with respect to replication and reliability of their findings. Second, there appears to be mixed support for the effectiveness of the KSD and it is quite limited.

The KSD promises to provide important information related to a childs' school interactions and emotional/behavioural repertoire. It requires few materials, is easily administered and is not limited by a childs' expressive/receptive language skills. As Dileo (1973) notes, a projective drawing can "be received as an instructional projective technique that may reveal the childs' feelings in relation to those whom he regards as most important and whose formative experience is most powerful" (p. 100). However, its' merits are flawed by its' inadequacies. In order to support the utility and popularity of projective drawings such as the KSD more empirical research and accountability needs to be undertaken.

## C. Purpose of the Study

The major problems with the KSD is that its' potential can not be realized until research provides accountability and demonstrates applicability. The purpose of this study is to provide the first steps in the process of making the KSD more accountable and applicable for school psychologists and clinicians. Essentially, the goal of this present study is to try and deal with some of the criticisms presented in the preceding section. Related to this goal are the following aims: (1) to develop a systematic and reliable approach for examining the KSD, (2) to develop scoring sheets, a reference guide and a rating scale and document how and for what purposes these can be used, (3) report normative data particularly with respect to what types of action, style and content children present in their drawings, (4) to provide further information with regards to the reliability of the KSD particularly in terms of the rating of drawings with the use of the instruments designed for the purposes of this study, (5) to provide qualitative and quantitative data concerning both the relationship between variables and group as well between variables and individuals and (6) to ascertain whether childrens' school drawings represent variation in type and significance of graphic indicators considered to represent psychological dimensions. In relation to these aims this study was designed to respond to the following questions.

## D. Questions

### Research Question #1

Can scoring sheets, a reference guide and scoring guide be developed that allows for reliable judgements?

### Research Question #2

What do children typically draw when given a KSD task?

### Research Question #3

Do the theoretical and clinical indicators developed and reported by researchers and experts show up in childrens KDSs?

### Research Question #4

Do different populations of children present different content in their drawings?

### Research Question #5

Can two populations of children be differentiated according to theoretical and clinical indicators?

### Research Question #6

Can indicators of psychological constructs be categorized and differentiate groups of childrens drawings?

## E. Limitations and Delimitations

1. The two scoring sheets (scoring guide) used in this study included all the major variables that are considered to be significant by experts and researchers working in the field of human figure drawings, kinetic family and school drawings. One of the scoring sheets

was developed to primarily investigate the individual signs represented in the drawings as well as prepare the raters for using the other scoring sheet that required the raters to evaluate the drawings with respect to various combination of signs. The other scoring sheet was developed to primarily investigate the global characteristics of drawing. A reference guide and rating scale was developed for this study to assist the raters towards consistently scoring the global characteristics presented in the scoring sheet. The construction of both these devices was based from research associated with human figure, family and school drawings which suggested that many psychological conditions could be better identified through a global analysis of drawings. Although the global method was not operationalized in the literature, a subjective assessment of drawings that incorporated configurative approach instead of an individual sign approach was implicated. The configurative approach seemed to involve the examination of drawings in terms of combination and inter relationship of signs in a holistic fashion rather than the examination of signs in an individual and non inter related fashion. Additionally, the effectiveness of this approach appeared to be a function of clinical experience and knowledge rather than a function of standard criteria.

In order to make the global analyses of drawings in this study more objective, systematic and standardized the graphic signs reported in the literature were combined according to the psychological conditions they were assumed to represent.

For the purposes of this study, an operational definition of global analysis was developed. For this study, global analysis was defined as the general evaluation of drawings with respect to various forms of psychological conditions by using a reference guide and rating scale. As previously noted, graphic signs of psychological conditions were combined and categorized according to the various forms of conditions, however, there was a difference between the reference guide and rating scale in terms of condition and use.

In terms of the reference guide, graphic indicators of some psychological conditions/states (for example, pathology, likeability) were simply categorized and listed. The psychological condition was considered present in the drawing if the associated indicators were by and large represented in the drawings. This approach was used primarily because there was no evidence that researchers or experts placed more significance on one sign or a particular group of signs over another sign or group of signs for the particular psychological condition.

In terms of the rating scale, graphic indicators of the remaining psychological conditions on the second scoring sheet (for example depression) were listed, categorized and differentiated with respect to degrees of significance for each condition (for example minimal significance, moderate and maximum) and the drawings were rated according to the type of condition and degree of significance. The primary reasons for this approach were that the indicators of these psychological conditions were more specific than the indicators for the psychological conditions on the reference guide, there were more indicators reported for these conditions and there was more evidence that researchers placed more significance on some signs and group of signs for these conditions than the ones on the reference guide.

In light of the above, the results based on the scoring sheets (scoring guide) reference guide and rating scale are limited because of the lack of procedural validation of these previously untried instruments.

2. The KSDs were group administered by teachers. Therefore, individual teachers provided instructions to their students as a group and collected the drawings for the investigator of this study. Even though all the teachers were given written and verbal instructions their presentation and procedure was not monitored. Hence, it is possible that while each student did an individual

drawing some of the students may have received varying amounts of and types of assistance and some of the students might have been influenced by their classmates.

3. The children in this study were not given any reasons as to why they were doing the drawing task, hence, it is possible that the gravity of the drawings varied due to different motivational levels.
4. All the students in this study were from one school jurisdiction in this province and were classified as being either learning disabled or non learning disabled so generalization to other school jurisdictions and to other types of children such as the mentally handicapped and behaviourally disturbed is not adviseable.
5. All the subjects in this study were grade five students with an average age range between nine years, nine months (9 years, 9 months) and twelve years, six months, (12 years, 6 months), hence, generalization to other groups beyond this age and grade limit should not be made.
6. It was assumed that the sampling procedure in the research design allowed for sufficient control of intelligence, achievement, race and class. A limitation of this study is that it did not provide information about the possible effect of these conditions upon the KSD productions.
7. This study compared the drawings of learning disabled children with non learning disabled children. Both

groups contained boys and girls, however, there was a disproportionate ratio of sex between and within the groups. There were ninety-six students (96) in this study of which 55 were boys and 41 were girls. The learning disabled group had significantly more boys and the non learning disabled group had significantly more girls. Since sex was not controlled as a factor generalization with regards to sex can not be done.

8. The heterogeneous nature of both groups in this study particularly in terms of psychological functioning and personality characteristics may have contaminated the exact nature of the relationship between the variables of this study and group. Therefore, many of the conclusions based on the results of this study should be considered speculative.
9. The theory underlying the KSD is that the content, style and actions represented in the drawings reflect the inner dynamics of the drawer. Support for this supposition is derived from other psychological theories as well as from clinical and emperical evidence that has shown correlations between conditions of individuals and their drawings. However, the results of this study are limited due to the absence of an integrated projective drawing theory and the conflicting research data regarding the diagnostic significance of graphic features.

## F. Overview of the Current Study

Chapter two contains a review of selected literature covering many subject areas. First, this chapter reveals the history of projective drawings and shows how the kinetic school drawing (KSD) evolved. Integrated within this historical perspective the underlying assumptions of the most popular drawing techniques will be contrasted.

One of the principal assumptions of this investigator was that psychologists considered projective drawings to be relevant and useful for school assessments and that the KSD might be particularly adventageous for evaluating and describing the social and emotional aspects of problems students could be having within the school environment. The section following the history of projectives presents a review of the research pertaining to the popularity of projective drawings from the psychologists' perspective. The research demonstrated that projective drawings are a favored technique by many practicing school psychologists which supports the need for further research with projective drawings such as the KSD.

Next, this chapter provides information regarding the theoretical principles of projective drawings followed by a discussion of the major differences between projective and objective measures of psychological funtioning and an evaluation of projective techniques from both a psychometric and clinical point of view.

The next section attempts to link some of the major theories of child development with the stages of childrens' art. Related to this area, information is presented that shows how concepts in psychology such as analysis of patterns, attention to sequence and the study of equivalents can aid in the study of drawings. Additionally, a review of some research is presented which suggests that the approach towards discerning the meaning of drawings can be compared to approaches used for abstracting meaning from language particularly in terms of structural and expressive quality. The significance of childrens' art is further emphasized through the reporting of opinions expressed by experts in the field of art education who attest to the capability of drawings to reveal childrens' growth, individuality, accomplishments, interests, feelings and emotions.

From the previously mentioned focus the chapter proceeds to give a comprehensive account of the human figure drawing research which generally reveals conflicting or unsupportive evidence regarding the effectiveness of human figure drawings to correlate with various levels of personality functioning in adults. However, the results of human figure drawings done with children suggest a greater potential for drawings to empirically correlate with various degrees of psychological maladjustment. Additionally, the review notes that research generally supports global ratings of drawings over the rating of drawings through the individual sign approach particularly in terms of measurement and associated reliability and validity.

Finally, the remaining sections of chapter two provides a comprehensive review of the kinetic family drawing and the kinetic school drawing. For both techniques, information is provided with respect to the specific purposes, administration, associated research, psychometric properties, and interpretation. This chapter concludes with a discussion about the importance and limitations of the KSD and a summary of the literature review.

Chapter three discusses the design used in this study. The statement of the problem and the purpose of the study is restated followed by a presentation of the major questions and hypotheses related to the current research. The procedure for administering the KSD is outlined and a description as well as a rationale of subject selection is presented. In addition, this chapter contains information related to how specific rating and scoring was handled along with an operational definition of each of the dependent variables so that replication is possible. Finally, the procedures for analysis of results is detailed and followed by a summary of the chapter.

Chapter four presents the results of analysis. First, the quantitative results of the test of each hypothesis is provided followed by a qualitative analysis which presents information particularly in relation to action and content, frequency distributions and infrequent responses so that, potential trends could be revealed with respect to patterns of variables between both individual and group. This chapter concluded with an overall discussion of all the results in order that the major findings could be collectively viewed and highlighted.

Chapter five discusses the results of the current study and then presents the implications of these results for future research. First, the quantitative and qualitative results are collected according to major variable classifications. In light of this arrangement, the results are discussed in terms of activity within the drawings, placement of self, figure portraiture, drawing integrity, content, individual signs and psychological constructs. This is followed by a discussion of the results in relation to the questions and purpose of the current study. Finally comments regarding the implications of the results particularly with respect to future research and use of the KSD are submitted and followed by ending remarks.

## G. Summary

The KSD is a projective drawing technique which is used to gain a better understanding and appreciation of childrens' perceptions of their school situations. The underlying theory of this technique is that the childs' inner dynamics can be reflected from their graphic productions. The KSD evolved from the development and use of many other drawing techniques. However, the procedure for administration and interpretation is particularly derived from the KFD which unlike other drawing measures focuses on the action represented in the drawing.

Projective drawings including the KSD appear to be popular with school psychologists and are considered to be an important component of the assessment battery. Like other drawing techniques, the KSD seems to have many advantages, for example, it is quick and simple to administer, it provides a way to observe children in a standardized environment, it appears to be less threatening for children and is particularly useful for assessing children who have a concrete orientation and limited expressive language skills. However, the utility of the KSD is flawed by its' inadequacies. Some of the major problems with the KSD are: (1) the potential and systematic applicability of the KSD has not been satisfactorly supported or demonstrated, (2) there are no clear cut rules for interpreting responses and no standardized scoring procedures are provided, (3) normative and reliability data is very limited and (4) there is little evidence that substantiates the effectiveness of this instrument to provide differential assessment.

The present study proposed to provide the initial steps in the process of making the KSD more accountable and applicable for school psychologists and clinicians. This is to be accomplished by developing a systematic approach for examining the KSD, creating a scoring procedure, exploring and documenting normative and reliability data and comparing the graphic responses of two school populations.

It was postulated that the two groups of children who have been selected according to the presence of specific learning and general behavioral, social and emotional problems or the general lack of them will differ in their view and representation of their school environment and school relationships. It was further hypothesized that differences will be reflected in the KSD.

Limitations were discussed and an overview of the current study was presented with a short preview of each subsequent chapter.

# II. LITERATURE REVIEW

## A. The History of Projective Drawings

The study of children's drawings, first as a developmental tool and then as a personality assessment tool, goes back at least 100 years (Koppitz, 1983). As noted by Mcphee(1975), drawings as a projective technique gained acceptance by clinicians after the publication of Machovers' Personality Projection in the Drawings of Human Figure (1949) and Bucks' (House-Tree-Person Technique (1948). Both the DAP and HTP were based on psychoanalytic theory and both were originally developed with adult and adolescent psychiatric patients. Later, both techniques were adapted for children (Hammer, 1960; Machover, 1953). Projective drawings remained largely clinical tools for assessment of psychiatric patients until the late 1960's and 1970's when school psychologists began to include projective drawings in their test batteries (Koppitz, 1983).

Initially, human figure drawings as a clinical technique was introduced by Goodenough (1926) as a measure of intelligence. Goodenough investigated the quality of human figure drawings in relation to cognitive and developmental variables. From her drawing test (Draw A Man) a clinician could make assumptions about the development of an individual based on the inclusion of details in the drawing of a man. The product of Goodenoughs' work was later extended by Harris (1963) as a systematic measure of intellectual development. However, Goodenough as well as other clinicians began to realize that human figure drawings revealed personality factors along with cognitive and developmental factors (Hammer,1958; Machover,1949). In 1958, Hammer noted: "In using the Goodenough Draw-a-Man Test (one) also became aware of the fact that emotional factors, more so than intellectual ones, were constantly pressing into view. In checking a drawing for credit for the inclusion of a hand, it soon became apparent that whereas the same quantitative IQ credit was given for a balled-up, clenched fist, or delicate and open hand in a feminine gesture, patting the cheek, produced by a male subject in his drawing of a male, more qualitative clues to the functioning of the total personality were being ignored. The subject was granted identical quantitative credit whether he drew his person with arms crossed defiantly over chest, hanging flexibly at the sides, or placed timidly behind the back, but the fact that these several arm positions had vastly different qualitative implications was not taken into account* and much valuable diagnostic and even prognostic material was overlooked. Similarly, the range of facial expressions, size, placement on the page, and so on, seems to offer more information about non-intellectual capabilities"(p.20).

Since the publication of Goodenoughs' work a considerable amount of research and application with respect to human figure drawings was generated particularly in terms of its' potential for personality investigation. In 1949, Machover reported that the individual reveals important aspects in human figure drawings, especially conflicts and needs. She postulated that a drawing is closely tied to the personality of an individual and that a person chooses a unique pattern of movement and idea. Essentially, Machover suggested that an individual will draw a human figure which is a projection of his or her physical and psychic self (Machover,1949). After many years of analyzing human figure drawings produced by clinical populations, Machover published her hypotheses and conclusions in "Personality Projection in the Drawing of the Human Figure (1949). According to Machover, the Draw a Person (DAP) technique could reveal a symbolic projection of self and could be determined by examining and analyzing the graphic product in a systematic fashion.

Machover (1949) discussed the meaning she associated with a number of features of the body such as "contact features"...the hands and feet, arms and legs, fingers and toes; additionally, head, neck, facial expression, size of figure, trunk, breasts, shoulders, waistline, sex and first drawn figure. Since her original hypotheses that the DAP could differentiate the pathological from the adjusted, studies were designed to explore and validate various measures of maladjustment. According to Swenson's(1956)and Roback's(1967) review of research in this area covering approximately 20 years, the finding by and large, either did not support Machover's (1949) hypotheses or provided conflicting evidence in the area.

At about the same time that Machover was developing the DAP and its' use for personality investigation, Buck (1948) developed a projective drawing technique entitled the House-Tree-Person (HTP) test. Like the DAP, the HTP was easy to administer. The subject is asked to draw as good a house,tree and person as he can with complete freedom with respect to type, quality and time. It is the individuals' view of himself and his enviroment, aspects he considers important, as well as the things he emphasizes and neglects to include that interest the clinician (Hammer,1958). The HTP was one of the first drawing procedures designed specifically to assess personality adjustment (Groth-Marnat,1984).

In 1951, Wilfred Hulse introduced the Family Drawing Test (FDT) which was an extension of the draw a man (Goodenough,1926) and draw a person (Machover, 1949) techniques. Hulse hypothesized that having a child draw his family rather than just a person could provide information about how the child perceives and interacts with his family (McGregor,1978).

Like-Goodenough and Machover, Hulse examined the human figures for signs of emotional maladjustment , however, he was more concerned with the total appearance or gestalt of the drawings as well as the behaviors and verbalizations produced during the drawing exercise (McGregor,1978, Sims,1979). An interesting finding from a study done by Hulse (1952) that compared normal with disturbed childrens' drawings was that all of the drawings appeared to show some form of familial conflict. Signs of significant maladjustment seemed to be a function of the degree of either figure or family constellation distortion.

In 1958 Emmanuel Hammer (1958) published a handbook entitled the "Clinical Application of Projective Drawings". This volume explored the techniques already mentioned along with many other well known (i.e. TAT, CAT, Rorschach, etc.) and novel approaches (eg. Draw-a-Person in the Rain). As noted by Mcphee (1975) the 50's and 60's witnessed the publication of hundreds of articles about projective drawings, however, it was not until 1968 and the appearance of Koppitz's work (1968) on human figure drawings that another major advance was made in the field of projective drawings. Koppitz's work was the culmination of ten years study designed to expand the empirical base of projective figure drawings.

Koppitz (1968) found that there is a great clinical value in family drawings. She reported that it is easier to draw negative family feelings than to verbalize them for the young child. The family drawing is less a production of the family than a revealing of a child's attitudes toward it.

She indicated that a child who spontaneously draws a family picture would be likely to have a positive relationship with one or both parents. These children have no need to hide or disguise their feelings. On the other hand, in the family drawing technique, which is used to investigate more negative feelings, family relationships are expressed through relative size and placement of the figures on the drawing and by the omissions, substitutions or exaggerations of the figures or parts of them (Koppitz,1968).

Koppitz designed a scale based primarily on the presence or absence of particular features of the persons'drawing. Eventhough the validity of this scoring system has been disputed (Lingren,1971), the work done by Koppitz has encouraged others to develop reliable and valid scoring systems for the analysis of personality from the DAP as well as other techniques (Stewart & Daniels,1970; Hall and Lardriere,1970).

In 1970, Burns and Kaufman expanded the human figure drawing tests and the family drawing tests to encompass movement. The previous drawing techniques used akinetic instructions (not requiring the subject to provide some kind of action in the drawing). Burns and Kaufman (1970) introduced a kinetic requirement in their instructions for a family drawing (requiring their subjects to produce some kind of action or movement in the drawing). According to Burns and Kaufman (1970) this added dimension could increase the diagnostic information over the static DAP and DAF particularly in terms of an individuals' status within the family as well as the family dynamics in general.

Essentially, the depiction of family interactions was thought to provide greater insight about an individuals' feelings and perceptions about his family and relationship within the family.

Burns and Kaufmans' work with the Kinetic Family Drawing (KFD) technique resulted in three books which provide analysis of family drawings according to the characteristics of individual figures, actions, styles, and symbols. Additionally, Burns and Kaufman (1972) introduced a scoring system to aid clinicians and researchers. However, they provide very little in the way of empirical support for their hypotheses and conclusions and rely primarily upon their case history evidence. Nevertheless, the product of Burns and Kaufmans' work has stimulated normative studies with the KFD (Jacobson, 1973; Thompson,1975), reliability studies (McPhee & Wegner,1976; Cummings,1980), validity studies (Sims,1974; Sobel and Sobel,1976); studies of clinical (Raskin & Bloom, 1979; Schornstein & Derr,1978) and cultural use (Freeman,1971; Kato,1979; Roth and Huber,1979), studies of objective scoring systems (Mostkoff and Lazarus,1983; O'brian and Patton,1974) as well as the development of similar instruments for the examination of school relationships (Prout and Phillips, 1974; Sarbaugh,1983).

As a result of the stimulated interest in the KFD, Prout and Phillips (1974) introduced the Kinetic School Drawing technique (KSD) which asks the child to draw a picture of self, teacher and peers doing something. Its' main purpose is to reveal the childs' perception of himself and relationships with others within the school setting. Like the KFD, the KSD is interpreted with respect to action, style and symbols. Essentially, the KSD is considered a school analogue to the KFD (Knoff and Prout,1985) and to date, there has been very few reported studies of the KSD.

Throughout their history, projective drawings have created a great deal of controversy particularly in terms of drawing interpretation. Many people do not consider projective drawings to be psychological tests because they do not follow formalized procedures for test construction and standardization (Groth-Marnat,1984). Anastasi(1968) noted that scoring differences between the different clinicians limits comparability and prediction and reveals examiner bias. Reliability and validity information is generally lacking and conflicting at best (Roback,1968; Swenson,1968). Test interpretations are sometimes based on an assumed isomorphy and use of analogy (Groth-Marnat,1984) and interpreters often use their own assumptions and preconceptions even when there is data contrary to their beliefs (Chapman and Chapman,1976). Most criticisms focus on the fact that drawing techniques lack clear and consistant scoring instructions, lack clear and systematic norms for interpretation, lack objective scoring criteria and lack empirical data to support clinical observations. However, despite these limitations clinicians and psychologists continue to use projective drawings as a way of assessing and treating individuals.

## B. Popularity of Projectives

Projective techniques appear to be a valued and useful tool by many clinical psychologists (Lubin,et.al., 1971; Wade and Baker, 1977). Among the projective techniques, projective drawings seem to be useful device particularly for school psychologists. One of the major requests of school psychologists is to determine the social/emotional status of referred children, however, there are few tests or methods available for such an assessment. Dileo (1973) has reported the effectiveness of drawing techniques in providing information with respect to childrens' thoughts, feelings, values, attitudes and relationships with others. According to Hammer (1958), projective drawings have special advantages over objective measures, for example, drawings are easy to administer, useful with children who have difficulty with verbal expression and tend to be less threatening. However, projective drawing techniques have very few of the attributes that comprise a good test such as standardization, scoring and interpretation, reliability and validity (Maloney and Ward, 1980).

Projective drawing techniques need to be subjected to at least minimal standards of reliability before widespread useage can be justified. They should be accompanied with appropriate evidence of validity, standards of scoring and interpretation. The lack of specific and verifyable scoring criteria causes serious problems for psychologists with limited experience with projective drawings and may result in dangerous misuse of the technique (Peterson,1982).

One of the underlying assumptions of this investigator was that projective drawing techniques are popular with psychologists. Hence, research related to dealing with some of the criticisms of projective drawings might make them more accountable and applicable as well as support their popularity.

According to the following review of many researchers (Goh,Teslow and Fuller,1981; Goh and Fuller,1983; Prout,1983, Sunberg,1961; Vukovich,1983; Wade,et.al.,1978) projective measures seem to be favoured by practitioners more extensively than objective measures with respect to social/emotional assessment of children and that projective drawings in particular seem to be worthy of further research due to their popularity.

## Review of Testing Practices of Psychologists

1. 
   Sundberg (1961)-Reported that of the 12 top ranked tests used by 185 clinical service agencies in the United States, three were drawing tests with the DAP second in usage to the Rorschach.
2. Wade, Baker, Morton, and Baker (1978)-Did a survey of clinical psychologists and determined that the two tests

most frequently recommended for clinical students to learn to administer were projectives (Rorschach and TAT) and among the 10 most frequently recommended tests, projective tests were recommended approximately 30% more often than objective tests. Wade concluded that fears that projective testing would fall into disfavor are apparently not being realized. (see table 1)

3. Goh, Teslow and Fuller(1981)–Reported that in a survey among school psychologists, personality assessment ranked 4th in emphasis after #1 Intellectual, #2 Academic, #3 Perceptual-motor. In conducting personality assessments, most school psychologists tended to prefer quick and easy to use procedures over more time consuming and more comprehensive techniques such as the Rorschach. (see Table 2).
4. Vukovich (1983)–Sent 200 randomly selected California school psychologists letters asking for participation in a study that wanted to discover their use of projectives as well as reasons for use, attitudes with respect to projective assessment and training in projective assessment. Ninety-two psychologists agreed to participate.

The Results of the study were that out of 3077 tests administered by school psychologists over a period of 20 days (average: 2.5 tests per day) 809 (20%) could be considered projective. The Bender-Gestalt accounted for 59% of projectives. 81.3% of non-projective tests were considered to be either important or very important in educational planning. 42.6% of the projective tests fell into those same categories. (see Tables 3,4,5,6)

5. Prout, (1983)—Conducted a survey examining the practice of school psychologists in conducting social emotional assessments of children and adolescents. A total of 173 surveys out of 334 randomly selected school psychologists from the American Psychological Association and National Association of School Psychologists were used. (see Table 7 and 8) The Results were that over half of the assessments conducted by school psychologists included social-emotional components. Assessment orientation appears to have shifted to more behaviorally oriented techniques and those which rely on clinical judgement. Practitioners appear to prefer drawing techniques over more traditional visual stimulus and response type of projectives. The use of objective measures of personality do not seem to be favored by practitioners.
6. Goh, D.S. and Fuller, D.B. (1983): Further analyzed the data from their 1981 report and examined the current practices in the assessment of personality and behavior by school psychologists (see Table 9). Overall, the results indicated that there does not seem to be an established methodology for systematic evaluation of personality. While projective techniques were far more often used than objective personality tests; easy to use

TABLE 1

Most Frequently Recommended Tests
(Wade et al., 1978)

| TEST | N |
|---|---|
| Rorchach | 137 |
| TAT | 133 |
| WAIS | 103 |
| MMPI | 99 |
| Bender | 81 |
| WISC | 79 |
| Picture Drawings | 65 |
| Sentence Completion Test | 51 |
| Standford Binet | 35 |
| Halstead-Reitan | 15 |

TABLE 2

The Eight Most Frequently Used Instruments Within The Personality Area (Goh, et. al., 1981)

| Instrument (Rank) | TMS | TMS (Rank) | URS (Rank) | WUS |
|---|---|---|---|---|
| Bender | 241 | 1 | 1 | 1 |
| Sentence Completion | 237 | 2 | 2 | 2 |
| HTP | 200 | 3 | 3 | 3 |
| TAT | 178 | 4 | 4 | 4 |
| CAT | 162 | 5 | 6 | 7 |
| DAP (Machover) | 124 | 6 | 5 | 5.5 |
| Rorschach | 122 | 7 | 8 | 8 |
| Self-Concept Scales | 120 | 8 | 7 | 5.5 |

N = 274

TABLE 3

Frequency of Usage Among Projective Tests, Excluding the Bender (Vukovich, 1983)

| Test used | Percentage of time |
|---|---|
| Draw a Person | 42.0 |
| House Tree Person | 18.7 |
| Incomplete Sentences | 14.5 |
| Draw a Family | 6.6 |
| Projective Drawings | 5.4 |
| TAT/CAT | 4.8 |
| Kinetic Family Drawing | 3.9 |
| Rorschach | 1.8 |
| Hand Test | .9 |
| Three Wishes | .6 |
| Duss Fables Story Completion | .3 |

Total No. of administrations = 331

TABLE 4

Reasons for Individual Projective Test Usage
(In Percent)--(Vukovich, 1983)

| TEST | | | | TEST USED TO MEASURE | | | |
|---|---|---|---|---|---|---|---|
| | I | M | P | S | A | L | V |
| Bender<br>3.8 | .5 | 35.8 | 5.2 | 3.3 | .4 | .3 | 50.7 |
| Draw a Person<br>1.0 | 3.4 | 14.1 | 36.6 | 41.0 | 0.0 | 0.0 | 3.9 |
| IncompeteSentences<br>15.1 | .8 | 10.3 | 27.8 | 31.0 | 12.7 | 1.6 | .8 |
| Draw a Family<br>3.3 | 0.0 | 0.0 | 53.3 | 43.3 | 0.0 | 0.0 | 0.0 |
| Projective Drawings<br>0.0 | 0.0 | 0.0 | 50.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| TAT/CAT<br>12.0 | 0.0 | 0.0 | 48.0 | 36.0 | 0.0 | 4.0 | 0.0 |
| Kinetic Family Drawings<br>47.1 | 0.0 | 11.8 | 11.8 | 29.4 | 0.0 | 0.0 | 0.0 |
| Rorschach<br>16.7 | 0.0 | 0.0 | 50.0 | 33.3 | 0.0 | 0.0 | 0.0 |
| Hand Test<br>25.0 | 0.0 | 0.0 | 75.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Three Wishes<br>0.0 | 0.0 | 0.0 | 50.0 | 50.0 | 0.0 | 0.0 | 0.0 |
| House Tree Person<br>14.9 | 4.6 | 13.8 | 32.2 | 31.0 | 0.0 | 0.0 | 3.4 |

I= Intelligence
M= Motor
P= Personality
S= Self-Concept
A= Academic Achievement
L= Speech and Language
V= Visual Perception

TABLE 5

Test Importance for Educational Planning
(in Percent)--(Vukovich, 1983)

| Test | Very Important | Important | Somewhat Important | Slightly Important | Not Important |
|---|---|---|---|---|---|
| Bender | 27.0 | 36.2 | 27.0 | 9.0 | .9 |
| Draw a Person | 19.0 | 20.0 | 48.6 | 10.5 | 1.9 |
| Incomplete Sentences | 13.6 | 43.1 | 43.2 | 6.8 | 2.3 |
| Draw a Family | 6.3 | 25.0 | 50.1 | 6.3 | 12.5 |
| Projective Drawings | 20.0 | 60.0 | 20.0 | 0.0 | 0.0 |
| TAT/CAT | 30.8 | 30.8 | 7.7 | 30.8 | 0.0 |
| Kinetic Family Drawings | 0.0 | 0.0 | 63.3 | 27.3 | 9.1 |
| Rorschach | 0.0 | 33.3 | 0.0 | 66.7 | 0.0 |
| Hand Test | 0.0 | 100.0 | 0.0 | 0.0 | 0.0 |
| Three Wishes | 100.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| House Tree Person | 21.3 | 9.8 | 63.9 | 1.6 | 3.3 |
| Non-Projective Tests | 44.9 | 36.4 | 14.1 | 4.1 | .5 |

TABLE 6

Attitudes Towards Projective Assessment (Vukovich, 1983)

| | |
|---|---|
| Importance of Projective Testing in the Future: | |
| Not Important | 62.5 |
| Important | 21.4 |
| Very Important | 16.1 |
| Reaction Towards Cutting Down Time Spent Teaching Projective Techniques: | |
| Very Unfavorable | 19.6 |
| Unfavorable | 41.1 |
| Favorable | 35.7 |
| Very Favorable | 3.6 |
| Do Reliability and Validity Studies Support the Use of Projective Techniques: | |
| Do not support at all | 3.6 |
| Slightly supportive | 41.1 |
| Somewhat supportive | 48.2 |
| Very supportive | |
| Tests Considered Inappropriate in the School: | |
| Rorschach | 38.6 |
| TAT/CAT | 26.3 |
| Blacky Pictures | 21.1 |
| House Tree Person | 8.9 |
| Draw a Person | 5.3 |
| Sentence Completion | 3.5 |
| Training in Projective Assessment: | |
| Percentage of respondents receiving training in administration, scoring and interpretation of tests | |
| Bender | 89% |
| Draw a Person | 82% |
| TAT/CAT | 75% |
| House Tree Person | 68% |
| Sentence Completion | 68% |
| Rorschach | 49% |
| Blacky Pictures | 33% |
| Kinetic Family Drawing | 4% |
| Hand Test | 4% |
| Draw a Family | 4% |

The mean number of courses taken by the respondents which involved training in projectives was 2.9 with a range of zero courses to 15 courses.

TABLE 7

Practitioners' Reported Frequency of Use of Social Emotional Assessment Techniques (Prout, 1983)

| Technique | Rank | Always Use | Frequently Use | Rarely Use | Never Use |
|---|---|---|---|---|---|
| Clinical Interview | 1 | 61.4 | 29.8 | 8.2 | .6 |
| Informal Classroom Observation | 2 | 47.6 | 45.3 | 7.1 | .0 |
| Human Figure Drawings | 3 | 41.9 | 41.3 | 11.6 | 5.2 |
| Bender Gestalt (emotional indicators) | 4 | 40.5 | 31.2 | 20.2 | 8.1 |
| Incomplete Sentence blank | 5 | 23.8 | 50.6 | 19.2 | 6.4 |
| Structured Classroom observation | 6 | 25.2 | 38.7 | 27.6 | 8.6 |
| House Tree Person | 7 | 25.1 | 37.4 | 22.8 | 14.6 |
| Clinical Analysis of intelligence test responses | 8 | 25.6 | 34.8 | 24.4 | 15.2 |
| Behavior Rating Scales | 9 | 18.3 | 47.5 | 20.0 | 14.2 |
| Kinetic Family Drawings | 10 | 17.5 | 43.3 | 15.8 | 23.4 |
| TAT | 11 | 10.5 | 36.6 | 39.0 | 14.0 |
| CAT. | 12 | 4.7 | 26.6 | 42.0 | 26.6 |
| Rorschach | 13 | 7.6 | 21.1 | 31.0 | 40.4 |
| MMPI | 14 | 1.8 | 9.6 | 27.1 | 61.4 |
| California Psychological Inventory | 15 | .6 | 7.2 | 19.3 | 72.9 |
| The Hand Test | 16 | .6 | 9.5 | 14.8 | 75.1 |
| Sixteen Personality Factor Questionnaires | 17 | .6 | 7.8 | 16.3 | 75.3 |
| Task of Emotional Development | 18 | 1.8 | 7.9 | 10.3 | 80.0 |
| Holtzman Inkblot | 19 | 0 | 0 | 9.0 | 90.9 |

N= 173

TABLE 8

Practitioners' Rated Importance and Reported Utilization of Assessment Approaches (Prout, 1983)

| Approach | Rank | Rated-Importance | Percentage Who Utilize |
|---|---|---|---|
| Behavioral Observation | 1 | 2.14 | 90.2% |
| Clinical Interview | 2 | 2.27 | 82.9% |
| Projective Tests | 3 | 2.96 | 73.5% |
| Behavior Rating Scales | 4 | 3.78 | 44.1% |
| Objective Tests | 5 | 3.84 | 50.0% |

N= 173

1 = most important; 5 = least important

and less time consuming projective procedures (ie. figure drawings and sentence completion) are clearly more popular than the more complex thematic and association methods.

The conclusion was that even though projective assessment has been frequently criticized, most school psychologists today are relying of these techniques for personality assessment.

Generally, the results of these reviews suggest that: i) projective measures of personality seem to be favoured by practitioners, ii) clinical judgement appears to be relied upon as much as statistical prediction, iii) Kinetic Family Drawings seem to be considered important and useful for assessing family relations, emotionality, motor performance, personality and self-concept, iv) even though projective assessment is considered not to be important in the future, they are presently used far more extensively than objective measures with respect to social/emotional assessment by school psychologists and are generally considered appropriate in school and v) are rated as the most used approach in assessment next to behavioral observation and clinical interviews. In summary, this research reveals that projective testing is favoured by many of the practising school psychologists and worthy of further research and application.

Projective drawings seem to be most appropriate for personality and social/emotional assessment when used as an

TABLE 9

Percent of School Psychologists Using Personality Instruments. (Total = 274) (Goh et. al., 1983)

| Instrument | Percent |
|---|---|
| Projective Techniques: | |
| Bender visual-Motor Gestalt Test | 88 |
| Sentence Completion Tests | 87 |
| House Tree Person | 73 |
| Thematic Apperception Test | 65 |
| Children's Apperception Test | 59 |
| Draw a Person Test | 45 |
| Rorschach Technique | 45 |
| Hand Test | 16 |
| Kinetic Family Drawing Scales | 11 |
| Rosenweig Picture-Frustration Study | 5 |

accessory to other devices rather than as a primary diagnostic technique (Groth-Marnat,1984). No one technique can adequately assess a childs' personality, social/emotional functioning, values and attitudes, therefore, a multiple measures approach should be used (Ball,1971; Kahn,1978). Self reports, behavioral observations and objective measures can also be used to gain insight into personality, perception of self, values and attitudes. However, projective techniques and drawings in particular, add dimensions not tapped by self reports, observation techniques and objective measures such as fantasy, imagination and deeper aspects that are being measured (Klepsch and Logie,1982). Furthermore, due to their ambiguous nature they avoid : (a) the possibility of consciously controlled responses, (b) response sets (always agreeing regardless of question content), (c) halo-effects (influence by the overall quality of the child) in observational assessments and (d) deliberate modification of answers particularly in objective measures (Kepsch and Logie,1982). Essentially, projective drawing techniques make a portion of the inner self visible and allow clinicians to uncover some information inaccessable through other assessment devices.

## C. The Nature of Projective Drawing Techniques

According to Hammer (1958) clinicians seek evidence of psychological traits, qualities or states in the stylistic features of drawings. The general idea behind this approach is that unverbalized feeling states are projected into the procedure by which one manipulates and arranges a medium that can be formed and patterned. The pencil is a device for giving permanent record to the organization of visual space and lends itself well to creative, organizational activity. Harris (1963) suggests that a child adopts a schema or style of drawing which is peculiar to him which becomes highly significant. Additionally, the manner in which elements are portrayed in drawings can be indicative of psychological states or conditions.

According to Goldman (1983) and Mahoney and Ward (1980) projectives are designed to ascertain the domain of personality. Projective devices assume that the way a person is organized psychologically will determine the content and style of that person's perceptions. In essence, the way a person responds to projective test material reveals something of his personality. Personal symbolism is not considered to be random and is thought to be determined by the characteristics of the person being tested. "Symbolism and perception are assumed to be shaped by the needs, fears, defenses and coping mechanisms of the person and to be revealed in projective data whether the product is stories a person tells, perceptions of inkblots, or responses to incomplete sentences or other ambiguous stimuli. Likewise, drawings are assumed to be visual-motor projections" (Goldman, et. al., 1983).

## The Projective Hypothesis

According to Hammer (1958), there is a tendency in man to view the world in an anthropomorphic way (in his own image). Projection is defined as that psychological dynamism by which attributes, qualities, feelings, attitudes, and strivings of one's own are directed to objects of the enviroment. The content of projection may not be known to the person as part of himself.

Sarbaugh (1983) notes that the projective hypothesis is that we put ourselves into everything we do. Our personality is revealed in our actions as well as in our ideas, beliefs or perceptions. We thus project ourselves outward into our products, especially when there are relatively few restrictions on how we carry out a given task. We are then free to use our ideas and the fruits of our experience.

Schneider (1977) notes that the projective hypothesis was first formalized as a derivation from Freud's concepts of unconscious motivation and projection by Herman Rorschach (1932), the "penchant for man for imposing his own ideas and interpretation upon instructional stimuli" (Raben, 1968, p.3).

Hammer (1958) notes that he believes that the child often goes beyond the mechanism of projection (for example, drawing what he feels about himself) and depicts that which he perceives in significant others.

In an attempt to account for the psychological phenomena revealed in projective drawings, Hammer differentiates the notion of projection from a related process which he terms "displaced perception".

"It has been observed that man has a tendency to perceive that which he expects, hopes, or fears to see...". If the subject projected his feelings of fear, one would expect to see a frightened rather than a frightening face. The psychological mechanism involved here, however is a kind of displaced perception, one does not see the environment which one expects to see.

Facial expressions drawn in projective drawings, like those recurringly seen in the Rorschach, are at times indicative of the attitude which the subject expects other people to have toward him.... There are no hard and fast rules of procedure that can help... differentiate between the times when the subject is projecting and when he is displacing perceptions. At times the subject will draw what he feels himself to be and at other times, as in the case particularly with a child, he will draw that which he perceives the significant figures in his environment to be" (Hammer, 1958, p.639).

In summary, Hammer (1958) as well as others (Rapaport,1946; Rabin,1960) believe that projective drawings provide important information about a child's needs, fears, anxieties and his attitudes towards himself and others. All behaviors are expressions of an individual's personality and "every act, expression or response of an individual... his gestures, perceptions, feelings, selections, verbalizations or motor acts...in some way bears the stamp of his personality (Hammer, 1958, p.5).

## D. Justification For The Use Of Projectives

Human figure drawings finds its' theoretical justification in self image psychology and psychoanalytic theory of projection. Sheldon (1935) noted that body image is a gestalt composed of many sensations and experiences with ones' body such as seeing ones' reflection in a mirror as well as noting the reactions of others to ones' appearance and behavior. Accordingly, when an individual draws a person he may reflect the many impressions he has of his own body as well as others' reactions to his body.

Lindzey (1961) suggests that knowing the theoretical foundations helps reasure the clinician about the utility of projective techniques. It will establish an independent basis for the reasonableness and attractiveness of these instruments. Lindzey (1961) notes three major approaches towards the integration of theory and projective techniques which are stimulus respose theory, empirical studies and psychoanalytic theory. These approaches have been used to attest to the utility and effectiveness of projectives and to ascertain personality dimensions of people. Lindsey

(1961) also reports that psychologists belong to three camps with respect to the theoretical foundations of projectives:

1. Projectives have no roots in psychological theory,
2. Current theories are inadequate and
3. Projectives are embedded in all of the theories

In terms of Stimulus-Response Theory, Auld (1954) examined the contributions of 'behavior therapy' to the understanding of projective techniques specifically in relation to the Thematic Apperception Test (TAT). Auld isolated three situations to distinguish

1. origin situation,
2. test situation,
3. criterion situation.

The link between the three is that emotional habits which are learned in the origin situation, appear in the test situation and will to some degree determine behavior (criterion). Generalization comes from the strength of habit and the conflict that it arouses. Atkinson (1954) examined motives as part of the general paradigm of stimulus-response analysis (S-R). A motive is described as a goal state aroused by cues associated with positive and negative past experiences. The arousal of motive activates responses. For example, the TAT activates motives by its' cues which come from the inner thoughts of the subject. The experimenter can manipulate responses by recognizing and holding constant the cues. However, a problem with associating Atkinson's assumptions to a foundation theory for projectives is that they concern themselves more with general motivational processes than typical projective techniques. Goss and Brounell (1957) examined response-produced stimuli as a technique for accounting for associated responses. Their theory was:

1. an element in the test evokes a response,
2. the response has been made to similar stimulus in the past and
3. the more similar the stimulus element the stronger the response.

Other areas that were attempted to link S-R entities to projective foundations include associative chains which refer to sequences involving motoric and verbal elements. Generally, the theory is that responses associated with past experiences tend to be linked with further responses. Latency time suggests that if a response occurs with a short latency the examiner may assume the absence of conflict. According to Goss and Braunell (1957) conflict exists if,

1. no response is given,
2. if similar anxious subjects provide responses with a short latency,
3. if there is speech disturbance,
4. if a long latency is followed by a bizarre response and/or
5. if there are vaso-motor changes (sweating, blushing, etc.).

In summary, the major problems with the S-R approach in establishing a theoretical base for projectives, notes Lindzey (1961) are that:(1)it has little to say about motives, traits and structures of behavior and (2) has more to say about S-R theory than the interpretation of projective techniques.

In terms of Psychoanalytic Theory, Schafer, (1954) stresses:

1. the importance of the tester/client relationship (transference, counter transference),
2. levels of psychic functioning (for example, regression),
3. patterns of defense (intellectualization, substitution, displacement),
4. ego-identity (self-conceptions, internalized social roles) and
5. fears, expectations and anxieties the subject brings to the testing situation.

Schafer (1954) also mentions such things as defense operations (for example, isolation, denial, intellectualization, ingratiating maneuvers and rebelliousness) that might distort responses and interpretation as well as enrich or give faulty inferences. Additionally, conscious and unconscious motives of both examiner and client make important contributions to responses and interpretations.

Other areas that are part of the psychoanalytic approach in formulating a theoretical foundation for projectives include response processes which lean heavily on Freud's concept of primary process (pleasure principle: inner impulses give way) and secondary processes, (rational, normative standard of conduct) which typically blend together. Determination of level involves the identification of variation in the accuracy, originality and determination of the subject's responses as well as the changes in attitude expressed by the subject with regard to the stimuli and the examiner.

The problem with the psychoanalytic approach in establishing a foundation for projectives is that the information relates generally to personality development and assessment and not specifically to the projective area.

Rapaport (1945-1958) has dealt extensively with the relation between psychoanalysis and projective testing. He suggests that use of projective techniques rest upon the assumptions that the examiner is seeking information concerning the subject which the subject is unaware or unable to communicate and consequently, these devices are closely linked to acceptance or the importance of unconscious motives. Rapaport believes one needs a theory of ego psychology or a theory of thinking to illuminate responses.

In terms of empirical studies, Lindzey (1961) isolates perceptual research and theory as having the most potential for establishing a theoretical base for projectives. The attempt of this area is to try and represent the process involved in projective testing.

Abt (1950) suggests that perception is centrally involved in all projective techniques, and notes that there are both internal and external factors involved. External factors are related to Gestalt psychology and little is said about them. Internal factors are related to Roger's (1951) concept of "internal frame of reference" and involve the self concept in a central manner".

Abt(1950)states that projective techniques are devices intended to maximize the operation of internal factors in perception. According to him, perception is "an active and purposeful process which involves the whole organism in relation to it's field. By its nature, perceptual activity has roots that extend deeply into the whole matrix of the individual's past experiences, and the perceptual activities of the individual reach out to fashion his orientation of the future"(1950, p.52). Abt's formulation of personality is an attempt to provide a theoretical background for Projective Techniques:

1. Personality is a system within the individual which provides an organized relationship between stimulus and response.
2. The organization of personality is dynamic, motivated and has the capacity to select stimuli and responses as an independent functioning system.
3. Personality is a configuration that fits the laws of Gestalt psychology.

4. The development of personality involves both differentiation and integration.
5. The development of personality is influenced by environmental factors, including particularly, cultural factors.

The bulk of perceptual research with projectives has been an attempt to show that needs, motives and defenses influence perception. However, to date, it has not clearly established a theoretical foundation for projectives.

Lindzey (1961) suggests that projectives need a unifying theory. Abt (1950) believes that instead of depending upon existing psychological theories to provide a basis for projective testing, one should instead create a "projective psychology" which uses concepts from many other theories but which is personality focused upon a view point derived from clinical use of projective techniques.

According to Hammer (1958) there is sufficient justification for the use of projective drawings from the clinical and empirical evidence as well as the internal consistency between one drawing and another, between drawings and other techniques in the projective battery, between drawings and psychoanalytic and folklore meanings of symbols, between drawings and the behavioral picture and between drawings and case history. Hammer (1958) also notes that projective drawings are justified because of their special advantages over other assessment devices, for example:(a) as a non verbal technique they have relative advantages with the mentally defective,the poorly educated,the non English speaking as well as the mute,the shy or withdrawn child, those with concrete orientation and those who find it easier to express themselves with pictures than in words,(b)for the child, the request to draw is likely going to reduce tension and release pent up feelings and impulses, (c)drawings are relatively simple to administer,provide a purer sample of behavior and are a good method for establishing rapport, and (d) drawings are applicable to large groups, transcend to deeper layers of personality, get under defenses more easily controlled by verbal expression and are more sensitive to the ebb and flow of therapeutic change.

The basic assumption underlying projective devices is that an individuals' personality will be reflected by the way he responds to the test materials. Generally, this applies to all psychological tests, however, there are fundamental differences between two traditional approaches to personality assessment. The projective method revolves around techniques which are guided by the projective hypothesis and the objective method revolves around the use of empirically derived and validated inventories.

### E. Differences Between Objective and Projective Techniques

Maloney and Ward (1980) state that "by the 1950s projective techniques became the hall mark of clinical psychology. Much of this popularity came from a reaction to the over emphasis on objective measures and quantification, in that projective tests were seen as "global personality measures" (p.345). In their book, "Psychological Assessment: A Conceptual Approach", Maloney and Ward (1980) distinguished six differences between objective and projective techniques in the assessment of personality.

1. Projective techniques involve a relatively unstructured demand on task. Objective tests are typically quite structured with a clear demand and a limited number of potential responses.
2. Greater latitude in responses with projective techniques allow the projection of more unique and individual aspects of his/her personality to be revealed in the test situation.
3. Projective instruments typically incorporate a disguised testing procedure which reduces the potentiality of the client to know what the examiners are looking for. In many ojective tests, the client may often realize what the examiner is testing.
4. Objective tests often examine specific traits whereas projective devices attempt to measure the whole person, ie. intellectual processes, conflicts, needs and emotional responsiveness.
5. Due to the lack of structure and disguised form, projective techniques are assumed to tap latent or unconscious processes. Responses are believed to reveal certain aspects of personality more freely with less

conscious control and less defensiveness;

6. Objective test results are typically quantified, whereas interpretation of projectives are more often summaries of the response rather than quantificantion of it. The interpretation is usually more qualitative and dependent on the clinician's experience and expertise rather than on a derived score.

Although projective assessment has its merits clinically;it is found wanting in all major psychometric criteria which is important to reveal.

## F. Evaluation of Projective Techniques

### Standardization

Projective techniques are typically poorly standardized (for example, different cards may be used with the TAT and different directions are often used with the DAP, KFD and KSD) with respect to administration and scoring. Additionally interpretation of results usually rests on the examiner's experience and expertise. Norms for most projective techniques are seriously lacking. Most examiners rely on subjective norms, hence, examiner bias may be reflected.

### Reliability

Projective tests unlike objective tests are not generally based on a derived score. Therefore, reliability is usually determined using interscorer or an interjudge technique on raw scores. Reliability is generally determined by the level of agreement between judges. Interjudge reliabilities on some projective tests have been shown to be quite high. However, as Maloney and Ward (1980) pointed out, reliability must reflect the final interpretative phase of assessment. In this sense, reliability tends to be low due to different examiners using different methods and due to a lack of control of expertise. Furthermore, because projective techniques commonly assess global aspects, different focuses by examiners may result in low reliability. Internal consistency of items is often inappropriate because much of the interpretation depends on sequence analyses and many of items on projective tests are not intended to be equivalent.

The three most common ways of obtaining reliability estimates are split-half, parallel forms and test-retest. In terms of split-half, the reliability estimate would be inappropriate for projective tests because of the limited number of items on most devices (low N). Parallel forms would be appropriate,however,many of the tests do not offer alternate forms.Test-retest, commonly believed to be the best method for obtaining reliability estimates (Maguire,1985) causes problems because personality changes may occur over time,or practice effects may contaminate the results.

## Validity

A test should be a representative sample of a universe of observations. Ambiguity and the intrinsic complexity of most projective procedures makes content validity difficult. Comparing projective test results to an independent criterion for obtaining criterion related validity is difficult because may of the criteria for projective assessments such as "ego strength" are difficult to define and measure. Construct validity assesses whether the test in question measures the theoretical construct it purports to measure. It is usually demonstrated by correlation studies using other measures assumed to tap the same theoretical construct. A construct is some postulated aspect of people such as self-concept. The assessment of construct validity is appropriate for projective devices. However, it is difficult due to the nature of a construct as being an inferred conception of a person. Constructs are complex and illusive. There is a vagueness about them because not everything is known about them. Constructs are traits which are considered to be reflected in test performance. It is important that the test results be consistent with the theoretical postulates of the construct and a relationship between the test scores and outcome be shown as well as being stable over time. This is problematic for projective measures because of the results being in the form of clinical interpretation rather than scores. Additionally, there are very few validated objective and standard scoring systems for projective measures. Furthermore,the results may be more state than trait oriented.

In summary, projective devices have very few of the attributes that comprise a good test. However, these insufficiencies are argued from a psychometric point of view. Projective tests are generally global in focus and objective tests are generally narrow in focus. Tests that are narrow in focus will have more accurate results. Projectives allow the examiner( who is knowledgeable) to sample a wide variety of processes and phenomena in a short amount of time. The utility of projectives may not rest on the psychometric attributes but rather on the conceptual validity of the assessment process (Maloney & Ward, 1980). As Cronbach says, validity may be overstressed and more attention should be perhaps paid to the utility of tests (Cronbach,1970).

In terms of projective drawings, Hammer (1958) attests to their usefulness by stating that they "appear to constitute one of the significant workable techniques in answer to psychology's quest for serviceable instrumentalities for personality evaluation"(p.649).

Any valid appraisal of personality or any aspect of behavior must take into account an individuals' age and developmental level (Dileo,1983). Developmental thinking involves both emotional and cognitive processes (Piaget,1954). Many investigators believe that drawings are spontaneous behavior and reveal childrens' feelings, emotions and desires along with various stages of development (Dileo,1970;Harris,1963;Koppitz,1968; Luquet,1913) Such free activity expresses not only the needs and emotions dominant at the time but also the more deep seated and lasting traits. A number of developmental theories reflect the relationship between drawing performance and growth and further supports the reasonableness of using projective drawings as an assessment device.

## G. The Psychology of Drawing: Developmental Theories

### Gestalt Theory

According to Gestalt theory, drawing evolves from simple to more complex forms. The child draws much more than he knows; he draws a visual structure not based on knowing but on an inner process of visual conceiving.

Arnhein (1964), believes every act of seeing is a visual judgement which is not affected by the intellect but is spontaneous. The child reacts visually rather than cognitively. Children's drawings start with simple overall features. They achieve similarity in essential structural features, but not isomorphic identity. (For example, a five year old's concept of a hand does not include "fingers").

The child draws what he "sees",however, Arnheim does not use the word "see" to indicate mere sensation. He does not equate the retinal image with the one recorded through the lens of a camera. He holds that the eye has already made a selection of the many visual stimuli that compose an image. This image is already a mental process and is an aspect of visual thinking. What we see and what the young child sees is not what the inert, non-living camera sees.

Arnheim(1964) notes a developmental progression in perceptual processes and hence in the child's graphic work. The emergence of parts from wholes by a process of differentiation is central to Gestalt principles. The so-called incongruities of the child's drawings (ie. "errors" of depth, dimension and transparencies) are all the natural outcome of childish logic, operating within the limitations of his medium.

## Organic Theory

The organismic theories have used concepts of behavioral maturation and learning stressing successive stages. Through development, operations involving perception, abstraction and generalization increase in elaboration and differentiation. Fundamental to this idea is one's awareness of relations (Bruner). For example, objects are first seen as being similar than they are seen to differ in certain respects. Where children typically grasp relationships between objects as given directly in their experience before anticipating or understanding them (can copy from a model before a picture) a child draws objects or people before he portrays people in relationship with each other. In early drawings children draw a few salient features to stand for the whole, for example head and appendages, then proceed to represent the head, trunk and appendages, etc.

According to Werner(1948), children use syncretism (representing complex forms by using simple forms). For example, a simple mark might be a shoe until sometime later when differentiation is accomplished. As the child's life becomes richer, more complicated and more abstract, drawings become less adequate as a means of expression. Drawing activity declines in late childhood and early adolescence because it is a concrete activity, it is less adequate than language for expressing abstract ideas.

### Physiognomic Influence

Due to art being basically part of human motor activity, it reflects physiognomic (kinesthetic and affective) as well as descriptive elements. Hence, graphic art may be said to have 'projective significance'.

Werner (1948) suggests that objects are understood first and most fundamentally through the motor affective attitudes of the observer who projects his own kinesthetic and visual cues onto the objects. According to Werner, drawings express affective, kinesthetic motor and concrete meanings before they express cognitive abstract ideas.

## Other Considerations

1\.

The earliest scribbles are more than random markings. They are patterned by the mechanical arrangement of the hand, wrist and arm as a multiple jointed lever: they are probably modified by the scribbler's visual observation and to a very limited degree by relations within the drawing field. Also, children enjoy and get pleasure from early drawings (Harris,1963).

2. Innate aspects of motor action may control the origins of drawing behavior (Harris,1963)
3. Drawing and writing show analogous patterns of early development and may have similar origins (Van Sommers,1984).
4. Directionality in drawing shows developmental trends. For example, Goodnow (1977) reveals that children have a right to left preference for example, before attending school. Children draw circles clockwise before adapting counter clockwise orientation and do not typically draw top top to bottom.
5. Most children from ages two to five begin to scribble and then advance to more traditional forms such as squares, ovals and rectangles (Kellogg,1972).
6. Orientation of the figure on the page appears to be related to handedness, but with age comes under the influence of cultural conventions of reading and writing (Van Sommers,1984).

7. The motor behavior in drawing serves to guide the production especially especially with pre- school children (Harris,1963).
8. Children's drawings are at best influenced more by concrete features than by abstract properties of objects (Harris,1963).
9. In comprehending the concrete features of objects, young children may depend on tactual and kinesthetic cues relatively more than do older children, who seem to depend primarily on visual senses (Harris,1963).
10. As children grow in maturity they draw objects as increasingly differentiated, yet organized wholes. As they grow older, children depict more features in the objects represented (Harris,1963).
11. In children drawings, language development and use are related to drawing performance(Harris,1963).

In summary, it appears that the drawing function changes as the child matures. Drawing is at first a means of expression where perceptual and motor aspects are inextricably bound with rudimentary concept formation. In time, the motor expression aspect of drawing becomes less and less important and the conceptual and communicative aspects more significant. As concepts become more sharply defined and controlled by visual percepts, the child's drawings become more indicative of class and type. Drawings express affect or feeling but perhaps less so as he relies more on verbal expression.

A review of projective drawings and their relationship to development is not complete without a brief review of the artistic development in children. Analysis of developmental patterns and sequences can add to our understanding of global as well as specific criteria used in psychological diagnosis.

## H. Artistic Development and Views on Child-Art

According to Piaget (1968), children view drawings as both a form of pleasure and the imitation of the real. Kellogg (1972) discussed that children draw for the esthetic qualities. Goodenough (1926) believed the shift from subjective to objective reality occurs around nine years of age. According to Dales (1973) the child at his early attempts at representation does not try to draw the object as it looks, but the idea, the internal model, and produces the schematic reduction to essentials. The child's drawing of a person is identical whether a person or other model is before him or whether he draws from memory.

Children's art develops in predictable stages (Kellogg, 1967, Dales, 1968). For example, according to Rouma (1913) there are six major stages:

1. Earliest attempts result in unrecognized configuration.
2. Tadpole stage;
3. Transitional stage in which cephalopod acquires a trunk and additional features.
4. Full face drawing of a person with progressive addition

of body parts.

5. Transitional stage in which early attempts at portraying profile may result in a mixed profile.
6. Correct profile orientation: preclude the depiction of movement.

According to Dileo(1973),children draw :

1. What is important to them: predominantly people, then animals, houses, trees.
2. Some, but not all that is known about the object.
3. What is remembered at the time.
4. The idea colored by feelings.
5. What is seen (in the sense used by Arnheim).
6. An inner, not optical reality.

According to Lowenfield (1954) art work reveals the personality of a child and content of drawings has a personal significance to the child. Generally, the stages of art are,

1. Scribbling (ending age 4);
2. Pre-schematic work (4 to 7);
3. Schematic work (7 to 9);
4. Realism.(9 to 11);
5. Pseudo-realism (11 to 13).

In terms of analyzing children's drawings, Goodnow (1977) suggests that new concepts in psychology such as analysis of patterns, attention to sequence and the study of equivalents aid in the understanding of drawings. Goodnow (1977) also addresses the following concepts:

## Reference Points

There are age differences in the way children draw or use groundlines or reference points. As Piaget and Inhelder argue, age changes occur in drawings. For example, drawing chimneys at 90% to a roof is a reflection of a certain stage of intellectual development. Children who do this are not yet able to use an overall point of reference for all the units in the drawing, instead, they relay on one unit as a reference point. Only when they can cope with multiple relationships are they able to consider a more distant reference point such as the ground line. This relates to Piaget's 'operational stage', where transformations can occur in one's mind.

## Nature of the Line

When children draw human figures there is a reason why they might omit arms, hands, and fingers. For example, when a figure is based on an all embracing line it is difficult to include hands and fingers into a following line. The nature of the lines often influence the inclusion of detail. Additionally, the relationship of drawn units and availability of space all have developmental features.

## Sequence

The nature of the child's art is a guide to the development of his/her strategy and skill. According to Olson, graphic constructions should be viewed as a sequence of steps. According to Goodnow, sequence in drawing helps children maintain order, as well as aid in the understanding of omissions, rotations, x-ray drawings, emphases on direction, control and planning.

## Units

Children spend much time and effort in observing the world around them and in drawing conclusions. Similarly, in drawing, children choose certain lines and features to denote a variety of objects /meanings. These equivalents are expanded and new ones are invented. For example, a circle may represent a ball, melon or a whole. Children often choose preferable units such as lines, circles and squares to represent features such as arms and legs. Units represent a form of economy, a sense of unity. Units are chosen by children for order and balance. Humans with no arms may reflect preference for shape and not necessarily immaturity as Goodenough (1926) may have concluded. An orderly progression appears from scribble to topology to pattern (lines and dots) to repetition (of lines or dots). This is consistent with Piaget's notion of transformation and intellectual growth. Principles related to a search for order, preference for particular shapes and transformation as well as the effect of earlier stages underlie the organization of units. Young children operate on the principle of "to each its own boundary and space". At age seven children use continuous lines maximally. At this age, hands like bunches of bananas appear because of the new problems of utilizing a continuous, embracing line, hence, interpretation of aggression may not be warranted.

### Left-Right Orientation

Children between the ages of three to five show a degree of order and consistency. They proceed according to plan. Sequence in drawing helps in understanding a child's development. For example, pre-schoolers show clear right/left preference. Left-right is a school stage. Older children use counterclockwise directions for circles, preschoolers clockwise. Pre-schoolers do not start top to bottom. Most sequences with children are arranged as a 'finish as you go principle'.

### Space

Availability of space often accounts for the positions of people or details of a drawing. For example, due to an emphasis on one part of the body, a child may run out of space for further detail.

### Patterning

Sequential patterning in drawing is affected by the demands of the task, experience in drawing, hand used and familiarity of shape and medium. For example, left-handers are more likely to start at the right and bottom of the page. Children sometimes rotate a drawing surface so as to have hand movement undisturbed. Errors often occur due to preferred sequences. Irregular shapes produce greater number of errors and development of perception affects sequence.

**Conventional Equivalents**

Conventional equivalents assist in understanding a child's perspective. For example, the shape of a mouth line may indicate feelings, position of pupils demonstrates the direction of a gaze, bottom of page usually denotes the ground level, the top for the sky, hair flying stands for wind or movement. Many equivalents are learned, modified and reused. They also represent one's experience and creativity. For example, drawing of a bird's eye view or sideview requires intellectual growth and recognition that the world has a different appearance. Young children tend to select a base and reference point and draw in a series of steps. Older children can change perspective and alter an 'old equivalent' For young children, a drawing may stand for 'mommy' or 'train'. For example, older children, variations start with changes in size (for example, drawing a family). New equivalents are added by extending lines followed by movement. The last change appears to be in the axis of the figure itself. Children 5-10 years of age generally progress in this fashion.

In summary, Goodnow believes that children's drawings are more than graphic productions. She stresses that children draw according to general rules of development.

They utilize space in a particular way, and tend to draw in specific age-related patterns. Their drawings reflect their thinking and adult influences. Graphic work appears to be a form of visual thinking but can also reflect other deeper psychological needs, defenses, desires, perceptions and felings as well.

Another major contributer to the understanding of child art is Rhoda Kellogg (1972) who from observations of children aged two to five indentified 20 basic scribbles: starting from the simple dot and straight vertical, horizontal, diagonal and arc lines,through roving lines to various modifications of the imperfect circle . These basic forms are combined into six diagrams: the Greek Cross, Square or Rectangle, Circle or Oval, Triangle, Odd Shaped Area, and Diagonal Cross. These diagrams are combined into at least thirty-six Combines and then into innumerable Aggregates (in which 3 or more Diagrams combine with or without additional scribbles). She believes that at every stage, children respond continually to the pressureof order and shape. The units they remember and repeat are those that have good visual form and good balance (ie.mandalla, oval-crossed lines). Additionally, these forms have an intrinsic attractiveness.

She states that scribbles (20 different kinds of markings) are made by two year olds and younger and can be done without eye-control. Furthermore, she claims that these basic forms of art appear in the work of all children and that a child who cannot scribble might well be severely disabled mentally or physically. From scribbles, children advance to the stage of drawing diagrams which give evidence of planning, forethought and the operation of memory.

Kellogg has stressed the fundamental pleasure children obtain from scribbling; how the process is reinforcing and self-teaching, and how gradually, the forms produced combine with the child's perceptions and intent to yield simple representations of human figures, houses, trees, animals, etc. She notes that the origin of the child's first human drawing can be traced to initial scribbles and diagrams. Additionally, she states that it is the way the child combines scribbles and the diagrams that gives a particular appearance to the human and all subsequent pictorialism.

Among the many insights with respect to children's art Kellogg (1972) reveals:

1. that early pictorials are related to animals, buildings, vegetation amd transportation;
2. that the child's art in kindergarten and first grade can be used as a guide for deciding whether or not the child has the mental development needed for learning to read;
3. that the child's mind must be developed through the impact of his/her own scribblings not through adult supervision;
4. that Stick Man, according to Kellogg is not an early version of a human, nor is it a popular one. She thinks it is learned at age 5 or 6 by copying the work of

adults. The stick man may be an abstraction of the many hamans known to the child.

5. that humans are not drawn from life, but represent an advanced stage of the child's mental capacity to create complex Gestalts and,
6. that animals are drawn by children usually after 5 years of age due to the influence of Kindergarten.

Like Goodnow (1977) and Kellog (1972) the relationship of drawing and development has been emphasized by Lowenfeld (1953) who suggests that elements of growth such as emotional, intellectual, physical, perceptual, social and asthetics are conducive to the development of the integrated human being and can be reflected in drawings.

**Emotional Release**

According to Lowenfeld (1953) there are graphic indicators that characterize the emotional release of the individual and are proportionate to the intensity with which he identifies himself. The intensity of self identification can be recognized by stereotyped repetitions which are indicative of the individuals' inability to adjust to new situations. Secondly, lack of personal participation in the world around him can be characterized by omitting himself from the drawing. Thirdly, there is inclusion of self when the overall schema is very identifiable to him. Finally, there is inclusion of self experiences (such as in the KFD or KSD) which the individual expresses his own personal identification with the world around him.

## Intellectual Growth

According to Lowenfeld (1953) a childs' increasing awareness of himself and his enviroment is typically indicative of his intellectual development. This development of alertness is reflected in the details which he includes in his drawings. For example, a child who when drawing a man is only aware of his head and legs is presumably less advanced intellectually than a child who also includes the body and its' associated features. As a child develops awareness of size and space relationships are also indicators of intellectual growth and can be reflected in his graphic representations.

## Physical Growth

Lowenfeld (1953) reports that a childs' physical growth is reflected in his capacity for visual and motorco-ordination by the ways he draws a line, controls his body and utilizes skills. Lowenfeld notes that a childs' drawings can be seen as developing from uncontrolled scribblings to specialized drawing treatment that require co-ordination and a fine degree of control (such as depiction of movement in drawings and different angles of perspective).

### Perceptual Growth

Lowenfeld suggests that perceptual growth can be seen in the individuals' increasing awareness of kinesthetic experiences from simple gross movements to more complex fine motor movements used in drawings. It can also be seen in the growing elaboration of drawing content which progresses from concrete to more advanced levels of conceptualization. For example, a front view of a house compared to a view that encorporates a variety of perspectives.

### Social Growth

Lowenfeld (1953) suggests that social interaction is of great significance to human development. A childs' inclusion of self and others in a drawing suggests that he is sensitive to his relationship with others. At first a child is primarily concerned with self. As he grows, he discovers he is not alone and his relationship with others can be reflected by such things as his placement of self in relation to others in his drawing and his security with this placement (base line drawing).

### Aesthetic Growth

According to Lowenfeld (1953) appreciation of the beauty of growth requires harmonious integration of the other components of growth. He suggests that children who lack aethetic growth show little organization and unity in their thoughts and feelings and that it can be expressed by a lack of unity, coherence and organization in their drawings.

Many respected individuals such as H. Read, Schaefer, Simmern and Arno Stern who have spent their professional lives in the field of art education give us further insight into understanding and appreciating child art and atest to its significance.

H.Read(Lewis,1973)believes that uninhibited artistic activity is parallel to the development of perception in general. The expressive gestures of the infant, from the moment that they can be recorded by a crayon or pencil, evolves from certain basic scribbles towards consistent symbols. Overseveral years of development such basic patterns gradually become the conscious representation of objects perceived: the substitutive sign becomes a visual image. According to one hypothesis every child in its discovery of a mode of symbolization follows the same graphic evolution. Essentially, he sees art as a languge free of the limits of time or place and the emergence of symbols is evidence of laws of organic growth.

Schaefer-Simmern, author of 'The Unfolding of Artistic Activity' states(Lewis,1973)that art has been called a visual esperanto: a language that can bring the people of the world together. As the child develops, he/she emerges into a visual conceiving stage of development where the simple visual order as wholeness of form carves the meaning of the total human being. When viewing a human drawing that appears to have arms attached to a neck, it is not the incorrectness of knowledge related to the human body but a general awareness of the whole situation: a human body consisting of various limbs. As a child develops he comes to terms with the outside world and as his observation increases more attention is paid to his pictorial work, Soon, (10 years of age) a child will begin to depict subject matter (ex. trees)showing different angles and feelings in expression of lines which will essentially be the imprint of a child's individuality.

In Schaefer-Simmern's eyes the perfect form that characterizes the drawings of children is an outward sign of an inner order, a sign that the child has mastered his universe visually and in doing so has mastered himself.

According to Arno Stern(Lewis,1973) who spent years in an internment camp and was the founder and director of the internationally known 'Academie du Jeudi', words are an imperfect language for children. Their sensations and experiences find more exact and complete expression in another language, the language of art. Child art is like verbal language in that it possesses its own grammar and its own vocabulary.

It is erroneous to think that children always try to show how objects look. A picture of a bird, for example, is not necessarily intended to show how a bird looks, but may express the sensation of flight.

According to Stern, drawings and paintings tell the astute teacher a great deal about the child. Some children identify with an inanimate object using their pictures of the object as a means of working through emotional problems. For example, one child drew a table with the legs going towards the center rather than away from it. The child herself badly bent over. She was obviously not well or strong. She was withdrawn. In her picture of a table she expressed her own bodily feelings.In essence, a child is not limited to showing what is actually visible. He may draw what he sees, feels or knows.

Read, Simmern and Stern all suggest that art is a form of language and is a way to communicate meaning and emotions. According to Kepsch and Logie (1982) art can be considered a pictoral language and note that "a drawing captures symbolically on paper some of the subjects thoughts and feelings---the very lines, timidly, firmly, boldly or savagely drawn give us some information. More is revealed by content which is largely determined by the way the subject perceives himself and significant people in his life"(p.6).

## I. Drawing and Language

Almost all objective and most projective tests of personality are based on language. However, projective drawings largely depends on graphic interpretation. According to Van Sommers (1984) drawings and language have many parallels which can add to our understanding of criteria used in psychological diagnosis such as levels, production, movement, syntax and structure, prosodics and cognitive strategies.

## Levels

Drawing and language are layered systems with a variety of levels. They are both pragmatic in that they serve important functions. For example, Van Sommers (1984) reports that in a study involving 86 male and female adults concerning private drawings, both males and females ranked the use of drawings as one of the most common ways for them to express their own feelings (3rd. and 4th. respectively). Additionally, Van Sommers notes that drawing and language have a semantic level in that they both serve as a way to convey meaning.

## Production

Van Sommers (1984) suggests that for any communication system there is a compromise between economy of production effort and economic perceptual effort. Drawings are produced by actions in which meaning may be actively involved in determining form, direction and sequence of strokes.

In both written language and drawing the more the content emphasizes meaning and the less it is routined, the more likely that semantics will prevail over form of production. Van Sommers (1984) notes that what ever accentuates meaning in the mind of the drawer may enhance its' penetration into the output stages of production. Also, when ever a drawing is produced without reference to meaning geometric forces will tend to dominate the production or graphic plan.

## Movements

As in written language, drawing has preferred movements. Horizontal and vertical strokes tend to dominate written language and movement tends to be from left to right. Similarily, drawing tends to be produced with a preference for vertical and horizontal strokes and also tends to be produced with left to right movement. Van Sommers mentions that like written language, drawings are comprised of left to right horizontal lines which are sometimes drawn with slightly shaky, tremulous effect where as vertical strokes are usually made more confidently.

## Syntax and Structure

Syntax in speech and writing involves a set of rules that govern an arrangement of words so that their connection and relation can be understood. The development of syntax is a long process that begins in infancy and develops in relation to an individuals' language experience. The development of syntax in language has parallels with syntax in drawing.

Initial speech and writing is predominated with the use of holophrases or sentence like words. Similarily, initial drawings are composed primarily of lines and dots which represent a relationship not fully expressed. Between two and three years of age, a child modifies his spoken and written language and combines words (telegraphic language) in order to be more explicit in meaning. Similarily, a child within the same age range begins to combine lines and dots to form more representative units such as ovals, squares and triangles. By the age of three or four, a child begins to encorporate subjects and predicates in speech and written language and by the age of five has usually embedded more words within the sentence structure such as conjunctions and adjectives in appropriate order. Similarily, in drawings, children by the age of three or four begin encorporating features in their drawings and by the age of five have embedded more designs in their drawings in appropriate fashion so that objects such as houses, cars, trees, and human figures can be clearly discerned and more fully appreciated.

As Chomsky(1972) has noted, grammatical rules have a life of their own, however, in graphics there is a variability in the application of rules. In written language, Chomsky suggests that meaning (deep structure) is derrived from expression (surface structure) and would be misleading if there was no formal rules and no context. Similarily, in order to appreciate the meaning in drawings a knowledge of context is also neccesary. However, because the rules are not so uniform, a knowledge of an individuals' artistic and cognitive development is neccessary.

## Prosodics

Prosodic features in language such as intonation and stress carries meaning and intention in language. Drawing is a mimetic system that usually requires little enabling experience to make it transparent to the audience. Drawings are produced by actions that involve for example, sequencing, perspective, proportions, reinforcement, pressure motion and erasures in which meaning and intension may be actively involved.

Often, during psychological investigation, speech is analyzed for insight into personality. For example, speech might be disjointed, bizzare, incoherent and or fuzzy which may be indicative of maladjustment. Similarily, drawings can also be analyzed in relation to those same features particularly in terms of the aesthetic qualities of drawings such as posture, gesture and symbolism.

## Cognitive Strategies

In writing and reading an individual generally moves from one sentence to another and then groups the ideas formed by these sentences into a central idea. Drawers often move from one item to another using a standard schema and group units together in an overall sequence. Like speech and writing, drawing reflects a unity in our mind.

Language helps guide a graphic product and can be viewed as a process or strategy which influences its' content and form. According to Van Sommers (1984) the linguistic description of what is to be drawn (for example, a school picture) is decoded and results in some perceptual-cognitive representation in the mind of the individual ,perhaps in the form of an image or some other quasi spatial theme. The individual then puts into operation a set of graphic skills and procedures to represent the scheme as a drawing.

Van Sommers (1984) reports that there are good drawers and poor drawers just like there are good readers and poor readers. As in reading research, drawing research suggests that one of the major determinants of good drawings is the knowledge and efficient use of strategies. Van Sommers reports that poor drawers tend to have inefficient and or make poor use of their strategies. Additionally, they fail to comprehend or grasp the nature of the task. Good drawers tend to use--successful strategies using knowledge of important graphic relationships.

Van Sommers notes that similar to language, a childs' receptive strategies or understanding of graphics outrun their productive capacities. Additionally, when children adopt stereotyped strategies for a graphic task they also include their own versions ,hence, stereotypes do not monopolize their production.

Bell (1948) noted that art work must be assessed as a whole and individual characteristics within that framework. Primary aspects to observe include form, content, composition, motion and general performance. All of these aspects are factors of the Kinetic Family Drawing and Kinetic School Drawing. For example, symbols can be considered to be composition and general performance and actions can be considered a form of 'force' of movement. Children's choice of style action and symbols might be a result of esthetic quality and developmental level as well as a way to reveal emotions. As noted earlier, the KSD evolved from the human figure drawing movement and the development of family drawings particularly with respect to Burns and Kaufmans' KFD technique. Hence, a review of the human figure drawing research as well as research related to the KFD and KSD follows.

## J. Human Figure Drawing Research

With Machover's (1949) original hypothesis that the content analysis of human figures could differentiate the pathological from the adjusted, numerous studies were undertaken to explore and validate various measures of maladjustment. In 1957, Swensen (1957) published an exhaustive review of the empirical evidence on the DAP from January 1949 through December 1956 . His specific focus dealt with the validity of Machover's hypothesis regarding the diagnostic significance of body features drawn by subjects. Generally, the empirical evidence did not support Machover's hypotheses, however, Swenson did note that the DAP appeared useful as a screening device with respect to psychological adjustment (1957, p.463).

A review of the human figure drawing research by Roback (1968) from 1956 to 1967 showed a lack of support for Machover's hypotheses . Roback (1968) pointed out the need for standardization and validation of measuring scales for assessing personality functioning from drawings. He believed the utility of human figure drawings was tenuous due to the subjective nature of interpretation and the global orientation for assessment.

In 1984, Kahill(1984), published a review of empirical studies dealing with human figure drawings of adults spanning the years from 1967 to 1982. In summary, the evidence generally did not support structural and formal aspects of figure drawing(except for trunk).

Despite the relatively unproven validity and reliability of projective drawings (with adults) a considerable number of researchers continue to support and use this technique (Dileo, 1970, 1973; Engle & Suppes, 1970; Hammer, 1958; Koppitz, 1965, 1966, 1968). Additionally, Swensen in a later review (1968),Kahill (1984) and Hammer (1958) believe research generally supports global ratings of drawings while individual signs have proven the least reliable and valid. Furthermore, Hammer indicates the need for the critics of projective drawings to realize that lack of empirical evidence does not mean that the use of projective drawings is not justified. "As with the use of any clinical tool, a grasp of the mere mechanical details of drawing interpretation cannot substitute for knowledge of personality dynamics and clinical syndromes which are the indispensable preliminary capability that the clinician (reader) must bring to his efforts to master the use of the projective drawing techniques (Hammer, 1958, p.646).

All of the published reviews have to date, examined human figure drawings with adults. Yet drawing techniques appear to be the most applicable with children, because for them, the drawing is one of best methods through which hopes, fears and fantasies can be expressed. According to Hammer (1958),"the drawing is likely to be the way in which the child communicates much that is important to him/her and troubles him/her.... Viewed as a creative act, the child's drawing becomes highly meaningful and communicative." (p.119).

The research on HFD's with children (1967-1984) suggests that many of the contact features, size and placement, body-image and global unterpretations can discriminate between populations of children .The evidence suggest that human figure drawing research with children has greater potential for standardized measurement and validation.

## K. Family Drawings

As noted earlier, Hulse (1951) extended the Draw-a-Person technique to a test that included the client's family called the Family Drawing Test. His interpretation was based un the whole drawing and not on individualistic signs. He thought that having a child draw his family would provide information with respect to his/her preception of the family and ongoing interaction.

Hammer (1958) stated that "the technique is most popular in it's use with children where determination of the sequential relationship to one's parents and sibblings is of prime importance" (p.391). Hammer (1958) notes that interpretation of family drawing include: omission of self or family members, relative position, relative size, interaction and isolation of figures.

Since 1951, Dileo (1970, 1973), Koppitz (1968) and Hammer (1958) have included in their publications discussion of the family drawing technique. Dileo (1970, 1973) showed drawings with respect to children indicate :

1. feelings of inadequacy,
2. sibbling relationships,
3. relationship with parents,
4. rejection from peers, and
5. self-esteem.

Additionally, Dileo (1973) provided examples of drawings produced by the mentally retarded and learning disabled. Koppitz (1968) discussed how family relationships are shown through relative size and placement of figures, omissions, substitutions and exaggerations of figures.

In terms of investigation research many authors (Reznikoff and Reznikoff, 1956; Lawton and Sechrest, 1962; Shearn and Russell, 1969; Sherr and Hicks, 1973) have reported the usefulness of the family drawing technique to distinguish between groups of children in terms of their feelings towards their family. However, most of the researchers' results were based on case study designs with little quantitative data to support their claims.

Kinetic Family Drawings were first written about in 1970 in Burns and Kaufman's book, "Kinetic Family Drawings". The authors included 'action' with the administrative instructions "draw your family doing something" and within the context of interpretation. The authors believed that adding this component would provide more diagnostic information over the Draw a Family test.

## L. History of the Kinetic Family Drawing

Children's drawings were initially evaluated holistically (Hulse, 1951) looking broadly at their quality. Hulse's technique (DAF) resulted in motionless, "nonkinetic" drawings, and has been criticized because of its inability to explore the family dynamics that give insight to a child's, feelings and perceptions, his family roles, influences and interactions (Burns & Kaufman, 1970, p.51). Hence, Burns and Kaufman (1974) added action as a main area to investigate.

## Research Associated With The KFD

The KFD has been used in many studies (see Table 10) and with a variety of clinical populations such as: emotionally and behaviorally disturbed children and adolescents (Burns, 1982; Burns & Kaufman, 1970, 1972; McPhee & Wegner, 1976),educationally exceptional populations (LD's) (Raskin and Bloom, 1979), children with perceptual-motor delays (Raskin & Pitcher, 1977), Chicano and white mentally retarded children (Magnum, 1976)and abused children (Schornstein & Derr, 1978). Additionally, cross cultural studies have been conducted in Japan (Kato, 1979; Ikura & Kubo, 1976; Kato & Schemezee, 1978),Great Britain (Freeman, 1971), Brazil (Souza de Joode, 1976),Norway (Landmark, 1975, cited in Burns, 1982), Germany (Roth & Huber, 1979),and the Phillipines (Lesesma, 1979) as well as objective scoring studies (McPhee and Wegner,1976; Meyers,1978;Mostkoff and Lazarus,1983; O'Brian and Patton,1974). Additionally, the KFD has stimulated the creation of other measuring devices such as the Family Drawing Depression Scale (Wright,1982) which in this case was able to discriminate KFDs of depressed and normal subjects as well as detect treatment effects (see Table 11).

TABLE 10

Research Associated With the Kinetic Family Drawing

| Author | Year | Area |
|---|---|---|
| 1) Britain | 1970 | Self-esteem |
| 2) Raskin | 1977 | Emotional Disturbance |
| 3) Sayed | 1974 | Diabetes |
| 4) Raskin | 1979 | Emotional Status/LD's |
| 5) Mostkoff | 1983 | Objective Scoring System (Measurement of Trait) |
| 6) Sobel | 1976 | Adolescent Male Delinquents |
| 7) Myers | 1978 | Quantitative Scoring System |
| 8) McPhee | 1976 | Emotionally Disturbed |
| 9) O'Brian | 1974 | Objective Scoring Method |
| 10) Wright | 1982 | Family Drawing Scale |
| 11) Reynolds | 1976 | Quick Scoring Guide to KFD |
| 12) Sims | 1979 | Comparative Validity of KFD |

TABLE 11

FDDS Item Analysis. Normal Controls vs Depressed Patients

| Scale Item | | p |
|---|---|---|
| Number of colours | 0 | <.001 |
| Organization | 0 | <.001 |
| Size of Figures | 0 | <.05 |
| Size--Self vs Others | X | <.001 |
| Isolation of Self-objective | X | <.001 |
| Isolation of Self-subjective | X | <.001 |
| Isolation of Family-subjective | X | <.001 |
| Detail | 0 | <.001 |
| Sex Differentiation | 0 | <.001 |
| Energy self | X | <.001 |
| Interest self | X | <.001 |
| Interest family | X | <.001 |
| Hopelessness | X | <.001 |
| Empty Space | X | <.001 |

X showed treatment effect
0 did not change significantly with treatment

## Psychometric Properties

Developmental norms tend to be isolated and questionable due to the lack of empirical basis and the use of a variety scoring systems.

Reliabilities are related primarily to effective training of raters. Validity is usually assessed by using the known groups method, for example: intact vs divorced homes (Johnson, 1975), adolescent male delinquents (Scbel & Sobel, 1976), siblings of severely emotional children (Hammer, 1975; McPhee & Wegner, 1976), discrimination of child abuse (Schornstein & Derr, 1978), and identification of effective foster home placement (Brown, 1977), however, validation is needed in terms of individual signs and global characteristics of the KFD.

## Purpose of the Kinetic Family Drawing

The theory behind the test is that the child's response as seen in the test can show much better than his words on how he feels about himself as a member of his family. The KFD provides one tool for measuring family dynamics, including development of the self within various family matrices.

It was hoped by Burn's and Kaufman that the KFD could be a new tool for understanding troubled children. The addition of movement to the kinetic drawings was intended to help mobilize a child's feelings not only in relation to self-concept but also in the area of interpersonal relations.

**M. Administration and Interpretation of the KFD**

In terms of administration, Kaufman and Burns recommended that the examiner places an HB pencil and standard 81/2in.x 11in.piece of white paper infront of the child and say: "I would like you to draw a picture of your whole family doing something. Try to draw whole people - not stick figures. Remember, make everyone doing somethingsome kind of action". After the child has completed the drawing he is then asked to label each person in the drawing according to their relationship to him, for example, self, mother, father, brother, sister, etc. Additionally, the actions of each figure should be identified and labelled, for example, cleaning, cooking, playing, etc. After the preceding instructions have been done, the examiner can collect the drawings and begin interpretation.

In terms of interpretation, Kaufman and Burns' recommended the asessment of three major areas:

1. the style of the drawing;
2. the action portrayed in the drawing, and,
3. the symbols used in the drawing.

Additionally, they recommend examining the characteristics and significance of individual KFD figures.

## N. Styles

Unlike the interpretation of the DAP and other Human Figure Drawings, the KFD styles do not specifically focus upon figure details. Interpretation is based on non-figure graphics:

1. compartmentalization
2. encapsulation
3. lining at the bottom
4. lining at top
5. folding compartmentalization
6. birds' eye view

### Characteristics of the Styles

1. Compartmentalization: This style is characterized by the intentional separation of family figures through the use of lining.
2. Encapsulation: This style is characterized by the intentional separation of significant family figures by enclosing them. The most common forms include the capsulation through the use of jumping ropes, circles and swings.
3. Lining at the Bottom: this style is characterized by line(s) covering the entire bottom of the page. It is suggested that the wider and more intense the lining, the more confident one can be of the style.
4. Lining underneath individual figures: This style is

characterized by the lining below an individual.

5. Edging: This style is characterized by human figures being placed on the perimeter of the paper. At least, two sides must have family figures along the edges which serve as the bottom for these figures.
6. Lining at the Top: This style is characterized by having more than one line extending across the entire top of the KFD.
7. Folding Compartmentalization: This style is characterized by children who fold the paper into segments and place individual figures into compartments.
8. Birds' Eye View: This style is characterized by intentionally drawing the picture so that the perspective is that of an aerial view.

## In Support of Style

Kaufman and Burns' provide very limited documentation with respect to support for interpreting styles. Their assumptions of significance is based on thousands of case studies which they say support their views of what the various styles represent. According to McPhee (1975):"The neo-analytic school of pathology appears to offer substantial theoretical rationale for Burns' & Kaufman's (1972) contention that KFD styles are associated with disturbed children. Sullivan (1940, 1953), Horney (1945) and White (1964) view mental illness (or mental pathology) as primarily a disturbance in inter-personal relationships. The patient often bears inter-personal reality because of some "felt" danger. Regardless of the specific source of this perceived threat, the troubled individual adopts a defensive restricted mode of behavior in an effort to maintain control. In otherwords, severe emotional and thought disturbances are, for the most part, associated with constricted behavior. Pathology, then as opposed normalcy can be viewed as stylized behavior-- behavior lacking spontaneity, diversity and flexibility associated with the well-adjusted person. Thus, given the assumptions of projective testing, it is not unreasonable for Burns & Kaufman (1972) to expect the drawings of disturbed children to reflect certain styles as opposed to non stylized drawings of adjusted children"(McPhee, 1975, p. 33).

Two studies (Kuethe, 1962; Weinstein, 1965) concerned with social schemata appear related to the significance of four KFD styles: Compartmentalization, Folding Compartmentalization, Encapsulation and Bird's Eye View.

Kuethe, (1962, 1964) published three articles on social schema in which he explored the way people organize social stimuli.Kuethe (1961) believed that when a person indicates that two objects belong together he has employed some scheme or plan. Their study examined how male undergraduates placed two or more of the following objects on a 2 x 21/2 yard blue felt;

1. woman-child
2. Three rectangles of different height

3. Man, woman, child
4. Square, circle, triangle
5. man, woman, dog
6. Man, woman, Two rectangles
7. Two women, two rectangles
8. Three men, three rectangles.

The order and distance of these placed objects were then measured. The results showed that participants responded to the task by giving ogranized responses and scattered or random placement of objects was rare.Additionally:

1. woman-child - man-child placements were done by 94% of subjects. Woman and child was closer together.
2. Rectangles were ordered by height
3. Ordering of woman, man and child was done by height most often.
4. Man between woman and child was rare Child between man and woman was done 40% of time.
5. Non-human objects tend not to be allowed.
6. The tendency to place human figures together was quite strong without imposing man non-human objects.
7. Man woman were predominantly placed together.

Kuethe concluded that"when people are allowed to place sets of objects cut from felt on a field, their responses are organized. There is a strong social schema - people belong together. Human figures were grouped together to a greater degree than were non-human figures.

The scheme that people belong together and than non-human objects should not intervene was revealed by his readiness to assume that the relations existing between people are primarily positive and that interaction rather than isolation is the rule.

In later articles by Kuethe (1964), it was reported that when people organize social stimuli they employ schemata which has been learned during many years of social experience. When male undergraduates were asked to group human objects (man, woman, boy, girl) during the 1964 study the predominant result was that adults were associated with each other and children with adults particularly mother and child.

Weinstein (1965, 1967) using Kuthe's Felt Technique, designed a study to test her hypothesis that emotionally disturbed children differed from normal children in the manner in which they organized social stimuli. Her results indicated that emotionally disturbed children departed from the typical schemata in that they tended to separate or isolate human figures(especially woman/child) in the experimant. The normal child would usually group the figures together, forming a close unit.

The tendency on part of the emotionally disturbed child to disperse human figures seems consistent with Burns & Kaufman's interpretation of the previously mentioned styles which involve the use of barriers and/or distance in separation.

As noted by McPhee (1976), Koppitz (1966) recognized the diagnostic rational with respect to lining on the bottom by suggesting that base lining indicates a sense of insecurity and/or a need of support:

> Young children who are living in a world of towering and domineering adults are by virtue of their size and age naturally insecure and in need of support 1966, p. 72).

Therefore, a high incidence of baseline is not to be unexpected. Koppitz (1966) supports Burns & Kaufman's notion that Lining at the Top (clouds) are manifested in projective drawings by very anxious children.

> Clouds seem to be drawn primarily by children who do not dare strike out at others and who instead turn their aggression inward toward themselves... the child is in effect standing under a cloud, under pressure from above (p. 65-66).

Edging is suggested by Hammer (1958) in his remark, "Figures which cling to the edge of the paper... reflect a need for support, fear of independent action and lack of self-assurance on part of the subject (p. 71). This seems consistent with Burns' & Kaufman's contention that edging represents extreme evasiveness.

### O. Actions

Actions and gestures people make are communicative in function and tell the observer much about a person's personality particularly with respect to "state" of being. Actions are behaviors and a form of non-verbal communication and are interpretable from drawings as being indicators of a subject's feelings/attitudes with respect to interpersonal relationships.

The KFD authors considered action to be a unique aspect of their test. Movement appears to be expected in normal drawings where as akinesis is considered to represent pathologic indices such as passivity and withdrawal. Jolles (1964) suggested the more violent, unpleasant and involuntary the movement is, the more indicative it is of maladjustment.

According to Burns and Kaufman (1972) actions represent a field of force between figures and indicate whether they:

1. are strangers
2. are lovers
3. are competitors
4. are non-competitors
5. are in conflict
6. are anxious
7. are avoiding each other
8. are in harmony

## P. In Support of Action

Burns and Kaufman (1972) discuss actions as "fields of force" and suggest that Lewin might have discussed or conceptualized this aspect in drawings in terms of positive and negative valences and various barriers. They add that behaviorists such as B.F. Skinner might call the emphasized parts of drawings as "discriminative stimuli".

Read (1966) noted that the very first stage of a child's drawing development begins with movement of the crayon or pencil on paper. Pradhommeau (1947) stated that movement is one method the child uses to attain visual realism between ages 6 and 7 and that the child trys to attain visual dynamism by expressing movement towards another.

Kurt Lewin's (1935, 1936, 1947) well known formula :B=f (P,E),suggests all behavior is a function of the nature of the person and of his environment. Machover suggests that the DAP represents "an expression of the self in the environment, ie. the environmental self. Perhaps the KFD self represents an expression of the self as form in early family life, ie. the nuclear self.

Connolly and Bruner (1974) suggest that action is associated with growth of competence. "Competence implies action, changing the environment as well as adapting to the environment"(1974, p. 3). According to these authors, action involves forming a schema, initiating a sequence of movements to achieve objectives and utilizing what has been learned from successes and failures in the formulation of new plans. Essentially, a person who is not involved in action could be considered devoid of plans, passive and not directing himself/herself towards achieving objectives. This appears consistent with Burn's and Kaufman's assumption that a child's state of development and psychodynamic tendencies particularly with respect to social interactions can be assessed through the type of action or akinesis which might imply what Burns and Kaufman suggest as evasiveness.

### Q. Symbols

According to Burns and Kaufman, symbols represent the unconscious. Kellog (1967) reported that the child increases in ability to put a collection of objects in a drawing as he grows older. Dileo (1970) reported that children's drawings are basically subjective and symbolic because the child has not yet learned to be objective or skilled in realistic drawing. Burns and Kaufman made reference to Freud for interpretative support but cautioned that symbols should be examined in totality of the individual, but are not just art content and are worthy of investigation.

Dempsey (1971) has found that even pre-school children have the ability and the inclination to symbolize using graphic forms in drawings. Lowenfield (1968) reported that the ages 7 and 9 are usually marked by an attempt by children in their drawings to represent their environment in consistent but changeable symbols. He added that this tendency towards symbols is less pronounced in later stages as the child learns to be more observant and sensitive to the environment and draws people with more observable differences and with more individual reality.

Hammer (1958) suggests that drawing productions are employed as one of the many forms of symbolic speech, for example, Psychiatric patients express themselves more easily through graphic means of communication than through verbal ones.

Insights of psychoanalysis have led to the awareness that the unconscious speaks in symbolic images. As well, symbolic art of prehistoric cultures, and ancient civilization attest to the value and meaning of symbolic aspects of drawings.

## Points of Consideration (Hammer, 1958)

1. Every drawing, symptom, fantasy or act has a history out of which it was produced.
2. The history is a dynamic, organized field of vectors.
3. The drawing of a symbol in a given case is produced by a unique field.
4. The same drawing or symbol in another case may be the resultant of a different field.
5. The field which produces a particular drawing or symbol is multidimensional.
6. That a drawing or symbol is economic and determined by a number of factors.
7. A particular psychodynamic in one matrix of factors may produce drawing symbol "A", in another matrix it may produce "non A", in another it may produce contra-A, in another reciprocal A.

According to Hammer (1958), it is at times difficult to determine whether a given drawing response reflects overt conscious trends or unconscious latent tendencies. While most elements have symbolic value, not all aspects reflect deep dynamic tendencies. Hammer (1958) cautions that when working with children, it is especially important to learn the symbolic meaning to the child of a given area of the drawing, lest the interpretation be based on adult symbolization.

To aid the examiners of the Kinetic Family Drawings, Kaufman and Burns (1972) report in their book a variety of common symbols they have found in their case studies along with the possible significance of these symbols.

## R. Individual KFD Figures

To aid examination and interpretation, Kaufman and Burns (1970, 1972, 1983) do report significance to some features . As pointed out by Dileo (1983), lone figure drawings are quantitatively and qualitatively superior to drawings of figures in a draw a family test because in the former, a child draws what is known and remembered, whereas in the latter, the family is likely to elicit a response imbued with affective elements resulting in less concentration on what is known and more in what may be felt in relation to other family members.

In terms of space and placement of figures empirical evidence (Swenson, 1968, Kahill, 1984) suggest that placement of figure away from the mid axis and to the left occurs in impulsive subjects likely to seek emotional satisfaction. Those who place the figure far to the right are frequently reflective persons with controlled tendencies. Machover (1949): believes placement to the left indicates self-oriented personality if to the right indicates environmentally oriented. Bolander (1977): considers placement on the left side of the page to represent the female principle and the right the male principle. Bolander interprets the upper half of the page as the area of the future, the center represents the present and the lower half zone comprises the past.

In terms of size and distance between figures results from Koppitz (1966) showed that shy children tend to draw large figures. However, many researchers (Prytula & Leigh, 1972, Black, 1972, Prytula & Thompson, 1973) found little support for the size/ self-esteem assertion.

Linear distance between figures is supposed to reflect emotional distance. This measure appears to have more clinical significance than empirical support due to the distinction of results when statistically manipulating distance scores between groups of subjects (Janzen, 1985). It appears from the literature that global interpretation of family drawings holds the most promise for empirical support. Swensen (1968) found in his review of the HFD literature that global measures were the most reliable, structural and formal aspects less reliable and and content least of all. Bolander (1977) stresses the need to grasp the tone and wholeness of the message conveyed in the drawings.

Schildkrout et. al. rely heavily on the total qualitative aspects (the Gestalt of the drawings) in their evaluations.

In terms of global interpretation of drawings, Hammer (1958) provides some important points to consider:

1. Relationships between the elements of the drawing more than the individual details may prove to be the validating dimension of projective drawings.
2. The higher a subject's state of self-esteem the more likely a "happy mood" will be drawn on the projected figure and the lower the self-esteem the more likely a dysphoric mood will be projected.
3. Content and global dimensions are proving more valid as projective drawing indicators than are formal or expressive characteristics.
4. Clues to a person's personality do not always appear in the same place. A person may reveal trait x in a type of line he draws, another on placement, another in its size, another in the color employed and another in pressure. In one set of projective drawings a diagnostic hint emerges, in another a personality need... it is the rare experiment that can catch such a complexity. Perhaps, studies employing global analysis prove more effective than those resting on item analysis for this reason.
5. The analysis of drawings should always include an evaluation of the whole drawing as well as an awareness of unusual signs or characteristics that may have

symbolic meaning and may indicate underlying conflicts or concerns. There is a consensus that no single item or sign on a drawing is by itself diagnostically meaningful, that a given attitude can be expressed in several different ways on a drawing, that one sign may have several meanings and that not all problems children have are necessarily shown in their drawings (Koppitz, 1983).

### S. The Kinetic School Drawing (KSD)

The kinetic school drawing was designed to deal specifically with the child's perception of his/her school situation. It was adopted directly from KFD and to date, is almost identically interpreted. Where the KFD attempts assess a child's position and relationship within the family, the KSD attempts to assess a child's relative status within the school environment.

## The Usefulness of Projectives in Schools

Strupp and Hadley (1977) suggest that for full evaluation of an emotional disturbance referral we need "clinical judgement aided by behavioral observations and psychological tests of such variables as self-concept, sense of identity, balance of psychic forces, unified outlook of life, resistance to stress, self-regulation, ability to cope with reality, absence of mental and behavioral symptoms, adequacy in love, work and play, adequacy in interpersonal relations (p. 190). Thus, there is a place for the concurrent use of behavioral and projective assessment as well as interviews, sociometric techniques and objective approaches (Knoff, 1983,395).

Knoff (1983) suggests that projective tests may provide a better dynamic approach toward understanding the child's psychological issues in his/her ecological context so that appropriate therapeutic programming can occur. "Diagnostically, projectives provide an opportunity to understand how the student thinks about and perceives him/herself, directly and indirectly, in different environments (Blatt, 1975). In cognitive sense, responses to projective stimuli reflect the student's style and contents of thinking and perception; this data is not readily available from behavioral observations. Through projectives, we can get a sense of the student's self-concept and self-insight and how he/she perceives peers, teachers, school, family, personal needs, and his/ her past, present and future. Projectives also may reveal creative capacities, hidden resources, and an individual's conscious preoccupations and goals (Klopfer & Toulbee, 1976) In a school setting, projectives:

1. may identify and discriminate significant psychological issues which may be troubling a student, a significant person in one of his/her environmental subsystems (eg. home, school) or both.
2. may provide a better understanding of the referral

problem and ecological system, especially when integrated with behavioral observation data.

3. may suggest appropriate intervention approaches such that the psychological issues are addressed or mediated as effectively as possible.

**Four Major Purposes of Projective Drawings in School**

1. They can reflect a youngster's personality and selfconcept.
2. Family drawings show children's perceptions of their family and their place within the family.
3. School drawings explore pupils' attitudes towards teachers and school.
4. Drawings can reveal students' values and attitudes toward social and cultural groups.

**Research Associated With The KSD**

To date, there has been only two studies related to the KSD which are summarized below: **Prout, H.T., Celmer, D.S. (1984)**

**Purpose of Study:** to examine the relationship between KSD responses and academic achievement among normal elementary school children. The general hypothesis predicted that indicators of emotional conflict and negative affect would be significantly related to achievement. **Subjects:** 100, 5th grade students; 44 boys, 56 girls **Measures:** Achievement was defined as the composite achievement grade level score from the Science Research Associates Achievement Test. **Measures from Drawing:**

1. In or out of school
2. Engaged in undesirable behavior
3. Engaged in academic behavior
4. Teacher height
5. Child height
6. Number of peers
7. Distance between self and others
8. Koppitz score
9. Distance between self and teacher
10. Reynolds score

**Results**: 6 of the 10 correlations of KSD variables with academic achievement reached significance at the .o5 level, with three of the others approaching the significance level.

Low achieving students tended to draw smaller teacher and self figures, included more peers in their drawings, put more space between themselves and both peers and teachers, produced drawings with a higher number of emotional indicators and tended to portray themselves in non-academic and/or undesirable activities, with the opposite tendency for high-achieving students.

**Schneider (1977):**

This study was designed to provide preliminary validation information for the Kinetic School Drawing (KSD). The subjects were comprised of all elementary school children who were referred to the school psychologist in one year (95). The school psychologist served as the examiner and rated the severity of school problems on a nine point scale and the severity of family problems in another nine point scale. These ratings preceded psychometric evaluation and were based on interviews with parents and with school personnel. A KSD and KFD were obtained from each subject using standardized instructions and conditions, along with age and individually administered intelligence test score data. A score for each drawing was obtained by summation of signs presented from a list of signs generally reputed to have negative implications. Multiple regression procedures were employed in prediction of school problem ratings and predictions of family problem ratings by the KSD score, and other variables. The full model involving the KSD score, KFD score, age and IQ significantly predicted both school and family ratings. However, neither the KSD score nor KFD score added significantly to the level of prediction achieved by age and IQ alone. Overall, the results of this study offered little support for the KSD as a diagnostic tool for the school psychologist, it could not conversely be concluded that the KSD had no utility for the school psychologist.

### Related Research

During the same time period that Prout (1974) introduced the KSD; Sarbaugh (1982) working in Ohio began examining projective drawings about school and developed an instrument entitled Kinetic Drawing - School(KDS) as a technique to elicit children's feelings and attitudes about school.

Sarbaugh notes specific advantages of the KDS. For example, it can provide information about the maturity of students,visual-motor skills, intellectual status, social-emotional development, interests,view of school and view of one's own self in the school setting . Specific advantages include :(a) drawings are a natural part of school life,(b) drawings put less emphasis on verbal ability,(c) drawings can aid in the examination of underlying attitudes reflected in surface behavior and (d) focusses on the child's difficulty related to school.

Sarbaugh (1983) takes a qualitative approach in interpreting drawings and believes that objective interpretation "ignores much of more valuable information" that school drawings may supply (p. 9). In her monograph (1983), Sarbaugh provides an overview of the KSD along with numerous case studies. Additionally, she discusses many of the features common to the KD-S and their possible significance . Although Sarbaugh (1983) provides fascinating and appealing account of the KD-S, her critics report may problems with her technique, for example:

1. No clear cut rules for interpreting responses and no standardized scoring procedures.
2. Most interpretations are subject to alternate speculations.

3. Unless method is indicated for interpretation such studies yield no communicable information about the strengths and weaknesses of the techniques/ variables.

### T. Administration and Interpretation of The KSD

It is recommened by Prout (1974) that after a child is provided an HB pencil and a plain sheet of 81/2 X 11 piece of paper, the examiner reads the following instructions to the child: "I'd like you to draw a school picture. Put yourself, your teacher and a friend or two in the picture. Make everyone doing something. Try to draw whole people and make the best drawing you can. Remember, draw yourself, your teacher and a friend or two and make everybody doing something."

After the child has completed the drawings he/she is asked to identify each figure (eg. "me", "teacher") and to describe the actions of the figures (eg. What is everybody doing?) The administrator can help the child label his/her drawings if assistance is needed. There is no time limit, however, the drawings can usually be obtained in less than 10 minutes and labeled in less than 2 minutes. After the drawings have been completed and labeled make sure all the identifying information has been done while collecting them from the child.

In terms of interpretation there are not any guidelines provided by Prout (1974, 1984). The use of Kaufman and Burn's approach particularly with respect to style, action and symbols is implicated with focus on school associations rather than family. Additionally, measures taken from Prout and Celmars' (1984) validity study are also considered relevant, for example, placement of self and type of behavior.

## U. Importance of the KSD

One of the major strengths of the KSD lies in its' focus. The KSD seems to have good face validity for school related referrals and therefore potentially useful for school psychologists that deal with children who have school related problems. Second, as a drawing technique, the KSD offers a way to observe childrens' behavior in a standardized enviroment. Third, the KSD offers children a way to represent their thoughts and feelings in a non verbal way. Fourth, it seems useful as a rapport builder and screening device.

## V. Limitations of the KSD

Among the most important situations that influences a child is his school interactions. The KSD promises to provide important information related to these interactions which are associated with the childs' emotional and behavioral repertoire.

At present , the position that the KSD offers a good sourse of data with regards to the childs' interactions is flawed by the inadequacies of the KSD. Some of the major problems are: (a) the potential and systematic applicability of the KSD has not been satisfactorly supported/demonstrated,(b) there are no standardized scoring procedures or clear cut rules for interpreting responses, (c) there is very limited information in terms of normative data particularly with respect to content, styles and actions, and(d) there is a significant absence of reliability and validity data.

In conclusion, the major problem with the KSD is that its' potential can not be realized until there is research that provides the initial steps in the process of:(a) implementing a systematic scoring system, (b) creating a scoring guide, (c) providing further normative, reliability and validity data, and (d) comparing responses of a school referred population with a generally non referred population.

## W. Summary

Childrens' drawings have been used for a long time for gaining insight in areas ranging from development and cognition to assessing behavioral adjustment and personality growth. Many researchers and psychologists support the utility of projective drawings (Dileo,1970,1973; Hammer,1958; Klepsch and Logie,1982; Koppitz,1968,1983) while others question their appropriateness (Dalley and Vale,1977; Lingren,1971; Swenson, 1968). Nevertheless, projective drawing assessments tend to be popular and used more extensively than objective measures particularly with respect to social/emotional investigation (Goh,et.al.,1983; Prout,1983).

-- The general theory underlying projective drawings is that the way a person is organized psychologically will determine the content and style of the persons perceptions and will be reflected in his drawings. Projective drawings are assumed to allow for more unique aspects of an individuals' personality to be revealed due to their unstructured, disguised and holistic nature (Maloney and Ward,1980) and their ability to tap latent or unconscious processes (Hammer,1958). The principles behind projection have been explained through a variety of suppositions such as response theory (Auld,1954), psychoanalytic theory (Freud,) perceptual theory (Apt,1950), gestalt theory (Arnheim,1954) organic and physiognomic theory (Werner,1948), however, at present, there is not one integrated projective drawing theory. Nevertheless, Hammer (1958) suggests that overall, experimental along with clinical evidence provides an adequate basis for the assessment and interpretation of projective drawings.

Projective devices from a psychometric point of view have very few attributes that comprise a good test. Most projective scoring systems rely on clinical background and experiences related to evaluation. Anastasi (1968) concluded that projective tests generally have inadequate standardization for administration and for scoring. She further added that even subtle differences in phrasing of verbal directions can change the performance of subjects. For example, the differences in verbal directions given by Goodenough, Machover, Harris, Hammer, Koppitz, Hulse, Burns and Kaufman and Prout results in varying contents of HFDs family drawings and school drawings. Anastasi (1968) reported that scoring differences between clinicians limits comparability and predictability and reveals the orientation of the examiner, for example, Chapman and Chapman (1971) found that projective tests are coloured by the scorers own assumptions and preconceptions. Norms for projective tests are often lacking and the examiner falls back on memory and experience that is often limited to atypicall children. Generally, research on the reliability and validity on various projective techniques over the past years has been conflicting at best to negative (Swenson, 1968; Roback, 1968). However, recent research is slowly advancing the likelihood of standardized and objective scoring systems with projective drawings to appease the empiricists and support the clinical view particularly with respect to global assessment and interpretation of drawings (Kahill, 1984).

Maloney and Ward (1980) point out that the utility of projectives may not rest on psychometric attributes but rather on the conceptual utility of the assessment process. Hammer (1958) supports this view by stating that there is no single technique that will in itself provide a complete and meaningful picture of the subjects' personality and the usefulness and value of projective techniques such as drawings for gaining insight about an individuals' interpersonal dynamics cannot be denied. He further states that the value of projective drawings is in the "techniques' capacity to reveal things that the subject is unwilling to tell or is unable to tell because he is unconscious of them (p.646) and/or does not have the ability to express them.

The utility of projective drawings is further established by the reasonableness of this instrument when appraised in light of the nature of the artistic development in children and its' relationship to projective interpretation. First, childrens' art develops in predictable stages (Dileo,1973; Kellog,1967; Rouma,1913) which allows clinicians to predict and anticipate particular drawing features according to age. Second, concepts in psyhology such as attention to sequence, analysis of patterns and use of equivalents are represented in drawings and allow clinicians to make judgements about an individuals' development with respect to planning, perception, degree of order and consistancy as well as perspective (Goodnow, 1977). Third, viewing drawing as a pictoral language (Stern,cited in Lewis,1973; Van Sommers,1984, Lowenfeld,1953) adds to our understanding that drawings pocess their own grammar and their own vocabulary. Drawings can be viewed as a form of communication which can reflect how an individual identifies with himself and his enviroment, his awareness of his surroundings, capacity for visual and motor co-ordination, degree of aesthetic growth as well as his feelings, needs, strengths, weaknesses and behavioral tendencies.

There are generally three major types or approaches to the administration and evaluation of childrens' drawings : HFDs which are generally assumed to reflect a childs' personality and self concept, Family Drawings (FDTs, KFDs) which are assumed to reflect a childs' perception of his family and his place within the family and School Drawings (KDS,KSD) which are assumed to reflect a childs' perception of school and attitudes towards his teachers and peers. From a historical perspective , these major approaches were also developed in the order presented.

Generally, a large amount of empirical evidence with the use of HFDs has failed to support the validity and reliability of the technique to differenti~~a~~te adults in terms of psychological conditions however, human figure drawing research with children appears to have greater potential for validation and reliability. In terms of the family drawings, particularly with regards to the KFD, limited empirical research shows that high interrater reliability for drawing characteristics is possible as long as scoring criteria are clearly defined and the raters are adequately trained (McPhee and Wegner, 1976; Mostkoff and Lazarus, 1983), that construct validity using the "known groups" method has been demonstrated (Johnston, 1975; Shornstein and Derr, 1978; Sobel and Sobel, 1976) and that objective scoring systems can and have been developed with success (O'Brian and Patton,1974; Mostkoff and Lazarus,1983), however, no one scoring system has been accepted which has resulted in a lack of normative data and consistant findings.

In terms of shool drawings, particularly with respect to the KSD, scoring systems and/or a methodological approach for interpreting the KSD as well as normative, reliability and validity data is lacking. Hence, the techniques' usefulness and potential an not be fully realized until research provides the initial steps for making this instrument more applicable and accountable for school psychologists and clinicians.

# III. Method

## A. Introduction

Generally, as outlined in chapters 1 and 2, the purpose of this study was to initiate a process which could begin to deal with some of the major criticisms of projective drawing techniques. Related to this goal, the KSD was chosen as one technique within the projective domain in order to empirically establish some support for its use by school psychologists and clinicians. Specifically, the problem was to develop a systematic rating system in order to provide information with respect to the individual and global characteristics of the KSD, document normative data related to the actions, styles and content represented in school drawings, provide reliability data, compare the responses of two school populations and evaluate the effectiveness of the KSD for differential assessment.

In this chapter, the importance of studying the KSD, statement of the problem and purpose of the study are restated and the major questions, hypotheses, research design, subjects and analysis are detailed. Additionally, this chapter contains operational definitions of each of the dependent variables as well as an explanation related to the rating and scoring of the drawings.

### B. The Importance of Studying the KSD

One of the major strengths of the KSD lies in its' focus. The KSD seems to have good face validity for school related referrals and therefore potentially useful for school psychologists that deal with children who have school related problems. The KSD would seem to have the potential for becoming a useful part of the psychologists' assessment battery. It appears to meet the preferrance of school psychologists to use quick and easy procedures (Goh,et.al.,1983) and provides a way for measuring social/emotional aspects of children which is considered by school psychologists as an essential component of a test battery (Prout,1983).

Another major strength of the KSD is that as a drawing technique it offers a way to observe children in a standardized enviroment. Additionally, many children prefer to represent their thoughts and feelings in drawings than to express their thoughts and feelings in writing (Cummings,1982). Furthermore, the KSD technique could be an important screening device and/or rapport builder. Generally, any instrument that provides more information about how a child relates to his/her school environment has value (Cummings,1982). Hence, due to the potential utility of the KSD and the apparent popularity of projective drawing techniques (Prout,1983; Vukovich,1983) the KSD technique is worthy of further research.

## C. Statement of the Problem

Research in social development has expanded rapidly (Hodapp & Mueller,1982). The major principle underlying social development is the concept of interaction. "Man is a social animal and from the day he is born he enters into a social relationship with numerous people" (Weinrobb,et. al.,1977,pg,31). The quality of this relationship is of fundamental importance to healthy development (Erikson,1950;Maslow,1954) and on forming ones identity. Among the most important situations which influence the child is his school interactions. The KSD promises to provide important information concerning these interactions which are related to the childs' emotional and behavioral repertoire.

The KSD technique may provide information about the childs' perception of his school environment and interactions. The KSD is easily administered and interpreted directly. It requires few materials and is not limited by a childs' expressive/receptive language skills. Koppitz (1968) regards projective drawings as having great clinical value. Dileo,(1973) reports that a projective drawing can "be viewed as an instructional projective technique that may reveal the childs' feelings in relation to those whom he regards as most important and whose formative experience is most powerful" (pg.100).

At present the position that the KSD offers a good source of data with regards to the childs' feelings, attitudes and needs is flawed by its' inadequacies. Some of the major problems with the KSD are:(1)the potential and systematic applicability of the KSD has not been satisfactorly supported/demonstrated,(2) there are no clear cut rules for interpreting responses and no standardized scoring procedures provided. Some researchers have developed objective scoring systems for the KFD with satisfactory inter judge reliabilities (Meyers,1978;McPhee & Wegner,1976;O'brian & Patton,1974),however, there are no such systems for the KSD,(3) most interpretations are subject to alternative speculations,(4)there is no information in terms of normative data particularly with respect to content and frequency of elements included in the drawings,(5)there is a significant absence of reliability and validity data,(6)there is no methodological direction for scoring or interpreting the drawings. Due to the absence of a reference guide or scoring manual for the KSD its' application is limited because of a preconceived notion that it takes decades of administrative and interpretive experience to use projective techniques such as the KSD (Wise & Potkay,1982). "Unless clinicians indicate their method, such studies yield no communicable information about the strengths and weaknesses of the techniques/variables"(Goldfried, et.al.,1971,pg.380) and (8) there has been an overly qualitative approach to interpreting projective drawings. A more balanced approach by using both qualitative and quantitative sources of information is needed (Potkay,1971).

In summary, the major poblem with the KSD is that its' potential can not be realized until there is research that provides the initial steps in the process of implementing an objective scoring system, creating a reference guide for interpretation, developing a systematic way of exploring graphic productions, providing normative, validity and reliability data, documenting a methodological approach and comparing responses of a typical school referred population with that of a generally non referred population.

## D. The Purpose of the Study

The basic thrust of this study is to provide the first steps in the process of making the KSD technique more applicable for school clinicians/psychologists. Related to this purpose are the following aims:(1)to provide a systematic approach for examining the KSD,(2)to explore and document normative data,(3) to begin in the development of a reference guide and scoring procedure,(4)to provide further information with regards to the reliability of the KSD and (5) to compare the responses of two school populations.

### Questions

In relation to the above aims this study will examine the following major questions:(1) can a reference and scoring guide be developed that allows for reliable judgements, (2) what do children typically draw when given a

KSD task, (3) do the theoretical and clinical indicators developed and reported by researchers and experts show up in childrens' KSDs,(4) do different populations of children present different content in their drawings, (5) can two populations be differentiated according to theoretical and clinical indicators and (6) can indicators of psychological constructs be categorized and differentiate groups of children.

## E. Hypotheses

The major questions to be examined in this study produce many hypotheses:

1. There will be no significant difference between the two groups in the type of activity presented for the major figures.
2. There will be no significant difference between the two groups in the type of activity represented between the drawer (self) and other major figures.
3. There will be no significant difference between the two groups with respect to location of self.
4. There will be no significant difference between the two groups in terms of facial expressions of major figures.
5. There will be no significant difference between the two groups with respect to the direction major figures are facing.
6. There will be no significant difference between the two groups in the use of barriers between the major figures.

7. There will be no significant difference between the two groups in terms of the content in the drawings.
8. There will be no significant difference between the two groups with respect to the distance between self and other major figures.
9. There will be no significant difference between the two groups with respect to the height of major figures.
10. There will be no significant difference between the two groups with respect to the number of peers presented in the drawing.
11. There will be no significant difference between the two groups in terms of the order of figures drawn.
12. There will be no significant difference between the two groups in their preference for clinical signs (See Dichotomous Dimension in Scoring Sheet Part 1, Appendix B).
13. There will be no significant difference between the two groups with respect to pathologic feature.
14. There will be no significant difference between the two groups with respect to the positive self concept feature.
15. There will be no significant difference between the two groups in terms of the structure feature.
16. There will be no significant difference between the two groups in terms of the likeability feature.
17. There will be no significant difference between the two groups with respect to the drawers' ability to match

his/her visible action with his/her verbal description.

18. There will be no significant difference between the two groups in terms of strangeness or unexpectedness.
19. There will be no significant difference between the two groups with respect to self or other figures being highly distorted such that without verbal description it would not be recognizable.
20. There will be no significant difference between the two groups in the quality of self activity.
21. There will be no significant difference between the two groups with respect to similarity of self activity with significant others.
22. There will be no significant difference between the two groups with respect to the quality of teacher activity.
23. There will be no significant difference between the two groups with respect to student/teacher relationship.
24. There will be no significant difference between the two groups with respect to the quality of self/peer activity.
25. There will be no significant difference between the two groups with respect to peer relationships.
26. There will be no significant difference between the two groups in terms of self placement.
27. There will be no significant difference between the two groups in terms of quality of self behavior.
28. There will be no significant difference between the two groups in terms of academic engagement.

29. There will be no significant difference between the two groups in terms of the rating for depression.
30. There will be no significant difference between the two groups in terms of the rating for isolation/rejection.
31. There will be no significant difference between the two groups in terms of the rating for anxiety/conflict.
32. There will be no significant difference between the two groups in terms of the rating for aggression.
33. There will be no significant difference between the two groups in terms of the rating for sexual concerns.
34. There will be no significant difference between the two groups in terms of the rating for dominance/power.
35. There will be no significant difference between the two groups in terms of the rating for defensiveness.
36. There will be no significant difference between the two groups in terms of the rating for support/acceptance.
37. There will be no significant difference between the two groups in terms of the rating for impulsivity.
38. There will be no significant difference between the two groups in terms of the rating for school problems.
39. There will be no significant difference between the two groups in terms of the rating for insecurity.
40. There will be no significant difference between the two groups in terms of the rating for competition.
41. There will be no significant difference between the two groups in terms of the rating for body concerns.
42. There will be no significant difference between the two

groups in terms of rating for negative self concept.

## F. Research Design

The present study employed a two dimensional cross break design (Kerlinger, 1973) in order to investigate the relationship of categorical variables at the nominal and ordinal level level of measurement. The independent variable was educational group (learning disabled and non learning disabled students) and the dependent variables were those listed on the scoring sheets used in this study (see Appendix B and C). Generally, this research study was taxonomic (Kerlinger, 1973) in that it was primarily oriented towards discovering, classifying and measuring graphic features in kinetic school drawings and investigating their relationship with two groups of students.

## G. Subjects

The subjects for this study were chosen from eight elementary schools within one county school board south of Edmonton, Alberta. The schools were in both rural and urban areas comprising a student body with varied socio-economic backgrounds. This study utilized approximately three quarters of the schools under the jurisdiction of the school board and were selected because they had the type of students (age, grade, classification) needed for this study.

This study used two groups of subjects (students). One group consisted of grade five learning disabled (LD) students and the other group was comprised of grade five non learning disabled students (NLD). Due to the low number of grade five LD students available within the school board the procedure for sampling was accidental (Kerlinger,1973)in order that a sufficient number of students could be obtained for this study. Due to the comparatively larger number of NLD students available, the procedure for sampling was random.

The NLD group was drawn from a public school sample of children who did not show evidence of significant learning difficulty and were considered by their teachers as obtaining typical achievement for their grade level. The LD group was drawn from a public school sample who had been classified as being learning disabled by their respective school in accordance with the following definition. "Learning disabilities is a generic term that refers to a heterogeneous group of disorders that may have as its' basis an identifiable or inferred central nervous system dysfunction. This group of disorders may be manifested by difficulties in one or more processes such as attention and concentration, perception, concentration, both social competence and emotional development, memory, reasoning, organization and planning which results in deficits in one or more areas such as communication, reading, spelling,writing and mathematics.

Learning disabilities affect individuals with average or above average learning potential in such a manner that the individuals' unique learning characteristics require accommodation in a modification to the instructional process and the learning enviroment.

Learning disabilities are not due primarily to visual, hearing or motor impairments, to mental retardation, emotional disturbance or enviromental disadvantage"(LD Pilot Manual,1984,pg.27).

In order to more clearly differentiate the two groups the LD students had a two to three year delay in reading. Additionally, in order to control for an intelligence factor all LD and NLD students had cognitive ability within the average range.

In order to control for developmental variables the subjects were chosen from one grade level. The NLD group was composed of students who were currently in a grade five (5) program within a regular classroom setting. The LD group was composed of students who should be in a regular grade five classroom/program according to their age however, due to their disability were functioning 2 to 3 years below the expected grade five level in reading. Additionally, they were receiving additional assistance within a resource room setting or regular classroom.

Grade five students were chosen due to three major reasons:(1)they tend to draw more accurately,(2) they are at a realistic age in terms of artistic development and (3) at this age they have sufficient experience and ability to think abstractly (Dalby & Vale,1977). The total population consisted of 96 students. There were 48 NLDs and 48 LDs including both male and female students.

## H. Administration of School Drawing

Instructions, guidance and collection of drawings from the students was conducted by the teachers of the respective groups. Group administration was done in order to gain a large sample quickly and efficiently. Teachers were given mimeographed sheets that provided the directions for group administration (See Instructions for Group Administration of the Kinetic School Drawing in Appendix A). In all cases, the investigator discussed the testing and directions with the individual teachers. All of the teachers were provided the materials (paper and pencils) required for their students' participation by the investigator. Additionally, all the teachers involved in this study were promised feedback at the conclusion of this study.

The KSD instructions follow the outline provided by Prout and Celmar (1974). The teachers were asked to supply the investigator with information in terms of age, sex, grade and classification (LD/NLD) of their students and attach this material to each childs' drawing. At the completion of the drawing the students were asked to write who each person is in the drawing next to each figure (self,peer,teacher) and then write what each person is doing. Teachers were allowed to assist their students with respect to this information if needed.

Instructions were read to the students by their teacher(s). In case of student misunderstanding, teachers were allowed to repeat the instructions without elaboration as many times as needed for comprehension.

Ability and achievement data was obtained from the school records. The drawings and associated data were collected from the teachers by the investigator.

## I. Reason For Choosing LD Students As A Comparative Group

One of the major purposes of using the KSD is to evaluate the childs' perception of his/her school situation. From the drawing the clinician attempts to assess a childs' position and relationship within the school environment. The aim is to identify and discriminate significant psychological issues which may be troubling the child.

Within the last few years there has been a widespread belief that learning disabled youngsters may experience interpersonal difficulties particularly in their interactions with teachers and peers (Lerner,1982; Wiig & Semel,1980). Furthermore, some researchers suggest that LD children are at risk for social neglect and or rejection (Bryan,1982).

Studies in which self concept of LDs is compared with that of NLDs indicate that LDs have more negative or lower self concepts. (Boersma & Chapman,1979). Research suggests that LD children have an attitude of learned helplessness (Bryan & Donahue,1980). They don't seem to have any confidence in their ability to improve their skills, hence,they experience much school failure. Gever (1970) indicated that school failure experiences often result in extreme feelings of discomfort, tension and anxiety.

Some investigators (Bryan,1984) have examined how LD children feel about themselves and significant others feel about them. Generally, LDs have lower self esteem and believe they have fewer friends than NLDs. Bryan and Bryan (1978) discovered in their study that LDs have unsatisfactory social relationships due to their low self concept and peer unpopularity.

A characteristic common to many LD children is a failure to be held in high regard (Bruininks,1978;Bryan,1974;Scranton & Rykman,1979). Children who have low self esteem,are unsure about their worthiness and who are disliked by others may withdraw from social settings and become isolates (Cowan,et.al,1973).

Another common characteristic of LD children is their emotional lability (Janzen,1984). LD children often display variable and fluctuating moods. At times they may appear frustrated and show obstinate behavior. Many researchers have described LDs as being inflexible, rigid,distractable,impulsive, uncaring,passive,immature, inattentive,hyperactive,aggressive,depressed,powerless and disorganized (Bryan,1983;Kronick,1981;Lerner,1984)

In summary,the research on LD children clearly suggests that LDs have as much social/emotional problems and needs as academic and that these problems/needs should be systematically explored and remedied.

LD children reveal their social/emotional problems in their behaviors, particularly within the school environment. According to the projective hypothesis it is possible that these children may reveal their associated problems when asked to draw a picture of themselves in school. The KSD technique appears to be a suitable avenue for these children to reveal their difficulties and as a group appear to be an appropriate population for studying the KSD technique.

## J. The Rating of the Drawings

All of the drawings and data information were collected from the teachers by the investigator. The drawings were numbered according to student classification (for example,odd numbers for LD and even numbers for NLD) and arranged for presentation to the raters who were not made aware of the classification system or the types of students who produced the drawings.

### Raters

The drawings were rated independently by six (6) raters. All of the raters were graduate students in the Educational Psychology Department and did not have any previous experience with the interpretation of projective drawings. Due to their lack of knowledge they were considered to be less apt to analyze drawings on criteria other than those intended. As Jones and Thomas (1961) note "criticisms made by psychologists in experimental and statistical fields of projective techniques for their subjectivity and non explicit interpretations have led to explorations in the use of judges without highly specialized training and experience in the interpretation of figure drawings---The non expert has been used experimentally when purposes and techniques have provided for increased objectivity and simplification in scoring"(pg. 235).

In order that the judges be less apt to be careless and less discerning in their evaluations of the KSDs if given too many drawings to examine, the 96 drawings composed of both LD and NLD students were divided into two sets of 48 drawings that contained an equal number of LD and NLD drawings. The first set of 48 drawings (numbered 1 to 48) were evaluated by three of the six judges and the second set of 48 drawings (numbered 49 to 96) were evaluated by the remaining three judges. All raters evaluated the same set of drawings for both Part 1 and 2 scoring exercises (See Appendix B & C). The raters were given an agreed upon time to view and evaluate their set of drawings. They were also required to attend two training sessions. The raters were given two separate scoring sheets to evaluate their drawings. Hence, a training session for each scoring sheet was conducted prior to each respective evaluation. The raters were trained on evaluating their respective set of drawings with Scoring Sheet Part 1 (see Appendix B) and then asked to judge their drawings with respect to this sheet. When the raters completed their evaluations they reconvened and were trained by the investigator on using Scoring Sheet Part 2 (see Appendix,C). After the second training session all raters were asked to re-evaluate their respective set of drawings based on the second scoring sheet. This separation of training sessions and evaluations was done to avoid contamination of responses on Scoring Sheet Part 1 due to advanced knowledge.

### Training Session Number One

All six judges (raters) were asked to attend a training session prior to evaluating their drawings with Scoring Sheet Part 1. The raters were given written instructions with respect to the scoring format and an oral presentation by the investigator to supplement the written instructions. The provision of a scoring sheet, written instructions and an oral presentation was to allow for more effective learning and to ensure standardization of procedure.

In terms of the part one evaluation, the drawings were rated in relationship to three general dimensions: (1)a descriptive dimension,(2) a continuous dimension and (3) a dichotomous dimension (all of these dimensions will be described in detail later).

The raters were instructed on how to record information with respect to these dimensions and were given direction on how to identify the various features contained within these dimensions. However, no information with respect to possible meaning and significance to these dimensions were provided.

After the information regarding Scoring Sheet Part 1 had been given,the three randomly assigned raters of drawings 1 to 48 and 49 to 96 were given five (5) drawings each to evaluate using Scoring Sheet Part 1. Upon completion of this exercise a percentage of agreement among the raters was examined to ensure/check their understanding and scoring reliability. If their level of agreement was high (90 to 100%) the training session was considered over. If their level of agreement was low (below 90%) then further guidance and direction was supplied in order to correct any misunderstanding.

When the training session was completed,the raters were assigned their respective drawings and scoring sheets . The raters were then asked to complete their evaluations by an agreed upon date in order that the raters could reconvene and begin the training session for part 2 and subsequent evaluation.

## Training Session Number Two

The training session for Scoring Sheet Part 2 (see Appendix C) generally followed the same procedure as the training session for Scoring Sheet Part 1. The major intention of Scoring Sheet Part 2 was to identify global aspects of the drawings. It was in this session that the raters were instructed on the indicators presented by numerous authors (Dileo,1973;Kaufman & Burns,1970,1972;Klepsch & Logie,1982; Sarbaugh,1982) as representing particular psychological constructs (features). The raters were provided a reference guide (see Appendix D), a scoring guide (see Appendix E) and scoring sheet (see Appendix C)

### K. Construction of Scoring Sheet Part 1

The major purposes of developing the "Part 1" scoring sheet were:(1) to ascertain qualitative and quantitative information with respect to the content (graphic signs/details) in the drawings,(2) to include all the graphic signs noted by researchers (particularly those involved with the KFD) to discover to what degree these signs are contained in the KSD,(3) to obtain inter-rater reliability estimates with respect to levels of agreement for the identification and scoring of graphic signs,(4) to initiate a systematic method for raters to examine the drawings particularly in terms of individual signs in preparation for a more global and interpretative approach in the next phase of examination, and (5) to obtain normative data.

The scoring sheet is composed of three dimensions (see Appendix B). The first dimension is entitled the "Descriptive Dimension" which involves the examination of the drawings primarily in terms of action and content. Essentially, the aim of this section is to:(1) record what the major figures (people) are doing by themselves and with each other,(2) to record where self (drawer) is positioned in relation to others, (3) to record the expression and direction of major figures and (4) to record the barriers (see "Definition of Terms") and content represented in the drawings.

The purpose of recording this information is to collect qualitative and quantitative data in terms of the subjects' graphic representations. This is considered important due to the lack of information in the literature with respect to what children tend to draw when given a KSD assignment.

Kaufman and Burns (1970,1972) and Dileo (1983) support the utility of examining the activity level in drawings because it might reveal the childs' feelings about his relationship with significant others. The analysis of the KFD is primarily focused on action rather than on inert figures. According to Kaufman and Burns (1972) the actions may represent both positive and negative feelings. Therefore, an examination of the activity level of the major figures within the KSDs' is considered important in order to gain insight in terms of what type of action is portrayed by two different groups of children. An examination of where the self figure is placed in relation to others, what kind of facial expression is represented for the major figures and what direction figures are facing are included due to O'brian and Pattons' (1974) contention that these areas can provide information regarding social and self concept.

O'brian and Patton (1974) and Kaufman and Burns (!970,1972) have suggested that the representation of barriers in KFDs might suggest interpersonal difficulties. Social schemata theory and research (Kuethe,1962) reveals that normal subjects tend to place human figures together unseparated by non human objects. The emotionally disturbed child places non human objects (barriers) between human figures significantly more than the normal child (Weinstein,1965). Due to the proposed significance and research findings it is considered important to investigate the use of barriers in the KSDs.

Many experts (Hammer,1958;Dileo,1983; Kaufman and Burns,!970) suggest that the content of drawings may convey symbolic messages. Kaufman and Burns (1970,1972) have listed a number of symbols (content items) in their publications and have provided interpretations of what they might mean for the child. Sims (1979) compared the content of normal children with the content of emotionally disturbed children and found no significant difference. For the purpose of this study an examination of what children draw in their school drawings both within and between two different groups of children is considered important in terms of normative data.

The second major dimension of "Scoring Sheet Part 1" is entitled the "Continuous Dimension". The focus of this dimension is the examination of the distance between major figures, the height of major figures,the order that figures are drawn and the number of peers drawn by the children.

Kuethe and associates (Kuethe,1960,1962,1964; Kuethe and Hulse,1960) have given evidence which suggests that interfigure distance is the graphic representation of the emotional difference between individuals. Many authors have provided support for the importance of interfigure distance in family drawings (Hammer,1958; Koppitz,1968; Shearn and Russel,1969). In this study, interfigure distance is the shortest distance in centimeters between two figures and is considered important in terms of normative data for the KSD. Similarily, the height of the figures included in the KSDs is considered important for normative data. In terms of height,some researchers (Klepsch and Logie,1982) suggest that if a child perceives another classmate as being more important he might draw him taller. If the child feels insignificant he may draw himself very tiny or smaller in relation to others.

The order that figures are drawn and the number of peers present may reveal a childs' concept of self in a social environment (Klepsch and Logie,1982)and hence it is considered important to investigate.

The third dimension is entitled the "Dichotomous Dimension" which focuses on the examination of the major graphic details (individual signs) that many researchers have noted as being significant particularly with respect to the HFD , KFD and KSD. (Dileo,1974; Hammer,1958; Kaufman and Burns,1970,72; Klepsch and Logie,1982; Machover,1947; Sarbaugh,1982; (Wadeson,1980). Hence, an examination of the

KSD with regards to these signs is considered important in terms of normative data.

## L. Directions For Recording On Scoring Sheet Part 1

### Descriptive Dimension

*Activity Level* :Raters are to describe in writing the type of activity each figure is doing in the drawing. For example: "self is sitting in his desk reading a book." These activities should be labelled by the drawer, if not, the rater is to describe what the figure(s) is doing according to the graphic representation.

*Activity Between Individual Figures* :Raters are to describe in writing the type of interaction between the major figures in the drawing. This interaction may be labelled, if not, the rater is to describe the interaction in terms of the graphic representation.

*Location of Self* :Raters are to circle one of the following responses : (a) isolated, (b) next to teacher, (c) beside peers in relation to selfs' (drawers') position in the drawing.

*Facial Expression* : Raters are to examine the faces of the major figures and judge whether the expressions are: (a) very friendly, (b) friendly, (c) neutral, (d) unfriendly. Then they are to check their response on the scoring sheet in the appropriate category.

*Direction of Figures* : Raters are to examine the direction major figures are facing : (a) out of the drawing, (b) away from major figures, (c) into the drawing, (d) facing major figures. They are then to check their response on the scoring sheet in the appropriate category.

*Barriers Between Figures* : Raters are to describe in writing the barriers placed between the major figures: (a) self/teacher, (b) teacher/peers, (c) self/peers.

*Content In The Drawing* : Raters are to list the content of the drawing on the scoring sheet (for example, chair, blackboard, etc.).

*Distance Between Self And Major Figures* : Raters are to measure the distance in centimeters between self and other major figures and record their results on the scoring sheet.

*Height of Major Figures* : Raters are to measure the height of major figures in centimeters and record their results on the scoring sheet.

*Number of Peers Present* : Raters are to count the number of peers presented in the drawing and record the result on the scoring sheet.

*Order of Figures* : Raters are to record on the scoring sheet the order of the figures drawn and labelled by the drawer.

*Dichotomous Dimension* : Raters are to inspect the drawings for the presence or absence of graphic signs in the drawing. If the graphic sign is presented the rater is to circle yes, if the sign is not present they are to circle no.

## M. Definition of Terms Used in Dichotomous Dimension of Part 1

The graphic signs/variables and associated definitions that are listed in this section have been collected from a variety of experts/researchers involved in the study, application and interpretation of projective drawings (Bolander,1981; Dileo,1973,83; Kaufman and Burns,1970,72; Koppitz,1968; Hammer,1958; Klepsch and Logie,1982; McPhee,1975; Schneider,1977; Wadeson,1980).

1. *Teacher,Self or Peer Missing* :Major figures are missing from the drawing.
2. *Compartmentalization* : A style of drawing that is characterized by the intentional separation of figures (people) through the use of lining. Usually, there is only one person per compartment. Generally, it is any division of the drawing into two or more separate areas.
3. *Edging* : This style is revealed when the subject places all the figures on the perimeter of the paper in a rectangular style. At least two sides of the 8 1/2 x 11" paper must have figures placed along the edges (edges serve as bottoms to the figures)
4. *Encapsulation* : The use of lines or objects to seal off individual(s) from the rest of the people in the drawing.
5. *Folded Compartmentalization* : This style is manifested

by subjects who fold the paper into segments and place individual figures in the compartments.

6. *Lining on the Bottom* : A style that consists of more than one line covering the entire bottom of the drawing.
7. *Lining at the Top* : A style that has more than one line extending across the entire top of the drawing.
8. *Underlining Individual Figures* : A style that has lining immediately below a standing individual or several individuals.
9. *Birds Eye View* : A style that has the drawing represented as if it was drawn from an aereal point of view.
10. *Self Turned Away From Teacher/Peers* : The drawing of self such that he/she is not facing a major figure.
11. *Figure Rotated 45 Degrees* : Any figure whose orientation is more than 45 degrees from an upright posture.
12. *Everyone Doing Different Activity*:Representation of figures doing something different from each other.
13. *Passive Activity*:Representation of non active involvement (for example, watching television, sitting).
14. *Evidence of Withdrawal (Self)*:Self figure is separated from other figures and/or not facing anyother figure.
15. *Lack of Interest (Self)*:Self figure does not appear interested in the environment (written descriptions may be on the drawing such as "don't care."
16. *Lack of Energy (Self)*:Self figure not engaged in any activity (passive or active). A written description may

appear such as "doing nothing."

17. *Sense of Hoplelessness*:Self figure represented as having difficulty achieving in some area. A written description may appear such as "can't do it" or "I'm not smart."
18. *Empty Space*:A significant part of the drawing surface (75%) does not contain any graphic elements.
19. *Uninvolvement (Self)*:Self figure is represented as not being a participant in any kind of activity related to what others are doing in the drawing.
20. *No Face*:Major figures do not have facial features (for example,eyes,nose mouth). Essentially, the face is seen as an empty circle or oval.
21. *Light Wavering Lines*:Drawing is generally produced with weak pencil strokes that appear unsteady.
22. *Water Present*:Any portrayal of water.
23. *Figures Drawn With Much Effort or Detail*:One or more major figures drawn with more significant emphasis than other figures or parts of the drawing.
24. *Figures Portrayed As Dominating or Powerful*:Figures represented as showing force or dominance.
25. *Excessive Shading*:Any over use of the pencil to darken in or colour a portion of the drawing.
26. *Scribbling*:Drawing features are predominantly produced in a fashion that appears hurried or careless. The total composition generally appears unorganized with objects lacking closure.
27. *Cross-Hatching*:Markings that have a series of parallel

lines that cross.

28. *Barriers*:The placing of objects or walls between figures.
29. *X's Present*:Any drawing which includes the use of an "X" in its' content, whether the "X" is alone or contained in another feature (for example,the crossed legs of an ironing board)
30. *Figure(s) In Dangerous Position*:Any representation of a figure that is portrayed in such a way that may result in harm(for example,a person in front of a car,a person on top of a ladder, a person in front of flying objects).
31. *Missing Essential Body Parts*:Figures are drawn such that basic human features are omitted (for example, head, eyes, nose, mouth, trunk, legs, feet, arms, hands).
32. *Figures on Back of Page*:Figures drawn on the back side of the 8 1/2 x 11" drawing paper.
33. *Erasures*:The use of the pencil erasure to amend or correct the drawing.
34. *Repetition of Objects*:The numerous reproduction of some object in the drawing.
35. *Exaggerated Size of Body Parts*:The drawing of a particular body feature (for example,hands,arms,feet) such that it is significantly magnified in comparison with the other body features that are drawn.
36. *Hanging Figures*:Identified whenever a figure is portrayed in a precarious position that may result in a

fall.

37. *Anchoring*:This style is revealed when the subject places all the figures on one side of the paper. This one side or edge of the paper serves as the bottom to the figures.
38. *Edged Placement of Figures*:This style is reflected when the subject places all the figures on the edges of the paper,however, unlike edging or anchoring the sides do not have to be considered as a bottom reference point.
39. *Buttons Drawn*:Any representation of buttons on the figures.
40. *Light,Broken,or Uneven Line Quality*:Generally, the drawing is produce in a sketchy way with inconsistent pencil pressure.
41. *Arm Extensions*:Arms drawn disproportionately long and/or holding implements as aids in controlling the enviroment (for example,a teachers' pointer).
42. *Precense of Lights*:Any representation of a light bulb or light feature.
43. *Tiny Feet*:The representation of feet such that the size is significantly smaller in proportion to the rest of the figure and associated features.
44. *Hostility or Anger Between Figures*:The graphic representation of conflict between major figures (written expressions may be included in the drawings such as "I hate him").
45. *Cutting Activities*:The presence of scissors or knives or

other such utensils.

46. *Precense of Weapons or Other Harmful Objects*:The graphic representation of precarious objects such as guns,arrows or darts.
47. *Teeth*:Any evidence of teeth within the mouth area.
48. *Heavy Line Quality*:Drawing product is primarily done with significant pencil pressure so as to create a generally darkened outline.
49. *Jagged or Sharp Fingers or Toes*:Hands or feet which are drawn with pointed extensions.
50. *Visible Action or Verbal Description of Hitting,Yelling,etc.*: The portrayal of overt aggression between or among major figures.
51. *Ballplaying*:Any evidence of playing with a ball.
52. *Evidence of Competition*:The representation of major figures competing with one another (for example,a classroom debate,games, sporting endeavours like basketball or baseball).
53. *Presence of Sporting Equipment*:Any graphic representation of sporting equipment such as baseball bats, hockey sticks,racquets).
54. *A's Present* :Any drawing which includes the use of an "A" in its' content whether the "A" is alone or contained in another feature (for example,The "A" frame of a swing).
55. *Representation of Achievement*:Any graphic representation or written description indicative of accomplishment (for

example, "Goodwork","You won","I am the best","100%").

56. *Elevated Features*:Any technique used to elevate various figures in comparison to other figures (for example,placing a person high above another,placing figures on top of boxes).

57. *Power Symbols*:A graphic representation of power through the use of objects such as cars, trains, motorcycles)

58. *Exaggerated Size of Figure(s)*:A preoccupation with a figure or figures such that their size is disproportionately larger than the other figures and or features in the drawing.

59. *Muscular Feature*:The presence of muscles on the human figure.

60. *Phallic Symbols*:Any graphic representation of an object or feature that suggests sexual conotations.

61. *Figures Lacking Clothing*:Figures drawn that appear unclothed.

62. *Transparent Figures*:Figures drawn in such a way that parts of the human body can be seen through the clothing.

63. *Figures Representing Sexuality or Seductiveness*:Any graphic representation of sexual flirtation or sexual encounter.

64. *Breast Emphasis*:Any graphic representation of female breasts.

65. *Zipper Drawn*:Any representation of a zipper.

66. *Belt Emphasized*:Any representation of a belt.

67. *Evasion*:The representation of all people as stick figures or a written description that states the figure is "standing".
68. *Akinesis*:Lack of movement in the drawing.
69. *Self Close to Teacher/Peers*:Graphic representation of self being significantly closer to the teacher or peers.
70. *Everyone Doing Related Activities*:All figures are doing an activity that is similar or related (for example,school work, playing,etc.).
71. *Self,Teacher,Peers Smiling*:Any graphic representation of figures smiling (for example,mouth corners turned up).
72. *Poor Integration*:Content in drawing is by in large not completed. Parts of the drawing do not seem to come together to make a whole.
73. *Overworked Lines*:Line segments in the drawing are heavily darkened due to heavy line pressure.
74. *Broken,Uneven Lines*:Symetry of drawing is disjointed.
75. *Perseveration*:Overuse of a line,for example,multiple underlining, continuous circling, multiple dots.
76. *Lack of Detail*:Drawing is essentially devoid of content.
77. *Simple Composition*:Features in drawing (objects and figures) are done in a simplistic fashion.The drawing as a whole is constructed with little regard to detail (for example, stick figures and single lines representing objects).
78. *Self Figure In Relation To Axis*:Position of figure in terms to centre cross axis (left,right,top,bottom of

centre crossed axis).

79. *Excessive Shading of Body Area*:Any extensive use of the pencil to darken in or colour a portion of a figures' body.

80. *Numerous Erasures on the Body*:Any extensive use of the pencil erasure to amend or correct the drawing of a body part.

81. *Part of Body Covered Up*:Any major part of the human figure (for example,arms.legs,head,trunk)covered up by the use of lines or objects.

82. *Hands Hidden*:Any representation of the hands being concealed by lines or objects.

83. *Extremity Cut Off By Paper*:The representation of arms,hands, legs,feet being unfinished due to their proximity to the papers' edge.

84. *Animal or Monster Like Appearance of Figure(s)*:Any animal or monster like representation of a human figure.

85. *Mechanical Appearance of Figure(s)*:Any representation of human figures being like a robot or machine.

86. *Large Head*:Head of the self figure is 1/3 the size of the total body or larger.

## N. Construction of the Reference Guide For The KSD

The construction of the reference guide for the KSD is based from research associated with the interpretation of Human Figure Drawings (Koppitz,1968; Machover,1947),Kinetic Family Drawings (Burns,1984;Britain,1970;Kaufman and

Burns,1970,72; McPhee,1978,Mostokoff,1983;Myers,1978;O'brian and Patton,1974; Raskin,1977;Reynolds,1978;Sayed,1974;Sims,1979) and School Drawings (Prout and Celmar,1984;Schneider,1977;Sarbaugh,1982).

The process involved the reviewing of the published material concerning the studying and interpreting of childrens' drawings, noting all the possible indicators of psychological states/conditions and then categorizing the information (See Reference Guide,Appendix D). It was from this accumulation of graphic indicators(and postulated association with psychological states/conditions) and subsequent categorization that the construction of Scoring Sheet Part 2 (See Appendix C), Rating Scale (See Appendix E) and global analysis approach was developed.

## O. Construction and Use of Scoring Sheet and Scoring Guide Part 2

Global interpretation of drawings has the most promise for empirical support (Hammer,1958). The total message conveyed in the drawing and the relationships between the elements seems to be more valid than relying on individual signs or graphic details (Bolander,1977;Swenson,1968). As Hammer (1958) notes, the feelings, perspective, attitudes etc., may be represented in a variety of ways in drawings, hence, the overemphasis on individual signs with the exclusion of others may result in not detecting a particular childs' message.

To date, the literature has not explained how one goes about making a global interpretation. There appears to be no systematic approach for conducting a global analysis of drawings. The focus seems to be in formulating a gestalt analysis of the drawing by inter-relating the content, structural and expressive components rather than an interpreting on the basis of each area separately. This vageness in terms of approach makes systematic, standardized and reliable analysis problematic due to the tendency for clinical bias.

In order to develop a systematic approach (by using a reference guide, scoring sheet and rating scale) an operational definition of global analysis was developed for this study. For the purposes of this study, global analysis refers to the general (global) evaluation of drawings with respect to general dimensions such as pathology,structural form,self concept,likeability, activity,depression,aggression, insecurity,etc.(SEE Scoring Sheet Part 2, Appendix C) by using a reference guide and rating scale (SEE Appendix D & E).

It is suggested in the literature (Kaufman & Burns,1970,72; Dileo,1983;Prout and Celmar,1984;Reynolds,1978;Sarbaugh,1982) that clinicians by and large examine drawings globally (generally) for evidence of the peviously noted dimensions, however,it is not clear on how they do this. They may interpret the drawings according to their opinion on the significance of individual signs, by some combination of signs (indicators) or by some kind of weighting system, however, there is presently no documentation with regards to procedure.

For the purposes of this study, a theoretically based rating guide and rating system was developed. In terms of global analysis the raters are to use the reference guide (see Appendix D) with respect to the following global dimensions on Scoring Sheet Part 2 (see Appendix C):pathology, positive self concept, psychological integrity (verbal/visual match), activity, inter-relationships, placement,and behavior. These dimensions and associated indicators are included in the reference guide ,and scoring sheet due to clinical and empirical research support . For example,pathology (Coopersmith,1976),likeability (Coopersmith, 1976),structure (Sarbaugh,1982),activity and inter-relationships (Klepsch and Logie,1982),placement and behavior (Prout and Celmar, 1984)).

The raters were asked to indicate the presence of these dimensions by recording the appropriate response (See Scoring Sheet) on the scoring sheet according to the respective criteria listed in the reference guide and following considerations.

## Considerations for Scoring

1.

*Pathology*:According to Wadeson(1982) and

Coopersmith(1976), this dimension represents severe emotional difficulty and is evidenced by many inter-related signs contained within the drawing. The determination of pathology is based from an overall perspective of the drawing. However,there are no specific guidelines with regards to criteria. Hence,70% of the indicators noted on the reference guide will need to be present in the drawing in order for the pathology dimension to be considered present.

2. *Positive Self Concept*:The literature does not state specific indicators of this dimension. It is usually considered present when there is an absence of negative indicators. Hence, signs considered opposite to negative self concept were postulated and used as criteria. Due to the lack of information regarding this dimension all of the indicators are considered to have equal significance,and therefore any evidence of any one sign will be considered sufficient for the presence of this dimension.
3. *Structure*:Emphasis on structure is considered present in the drawing when the physical enviroment is significantly more emphasized than figure activity (Sarbaugh,1982). Due to the lack of information with regards to sign significance, if the drawer emphasizes the physical environment (clocks, board, desk) over the figure involvement then a structural orientation is considered present.

4. *Likeability*:The determination of whether this dimension is present in the drawing is based on the examination of the drawing with respect to the indicators for likeability in the reference guide. Due to the lack of information in terms of criteria and significance of signs, the rater is to make a decision by determining which category of indicators best describes the drawer and then scoring in that direction.
5. *Psychological Integrity*:The determination of this dimension is based on : (1) whether the written description matches the action (for example,the written description of "reading" matches the graphic representation of this activity),(2) how recognizable the figures are drawn and (3) whether the drawing contains any bizarre, strange or unexpected content.
6. *Positive Activity*:The determination of this dimension is based on the presence of the associated indicators in the drawing (See Reference Guide).
7. *Problems in Relationship*:This dimension is determined by the presentation of any evidence that suggests difficulty with respect to figure interaction.
8. *Placement and Type of Behavior*:The determination of this demension is made by chosing one of the three alternatives listed on the scoring sheet with respect to the information on the reference guide.

Generally, the determination of the preceeding demensions is done by examining the drawings with respect to the reference guide. The decisions are primarily governed by the following principle: The dimension is considered present in the drawing if the associated indicators are by in large contained within the drawing. This approach for these dimensions is used because :(1)there is no other direction offered in the literature,(2) there is no evidence that researchers or experts place more significance on one sign within a dimension over any other sign,(3) there is no support or information regarding a particular criteria to be used when a number of signs for a particular dimension appear to reflect that dimension,(4) research findings based on these demensions have not been validated and (5) in terms of these particular dimensions a list of inter-related indicators as a general guide appears to be the most appropriate for achieving systematic exploration by raters.

For the remaining global dimensions (Depression,Isolation/Rejection, Anxiety/Conflict,Aggression,Sexual Concerns,Dominance/Power, Defensiveness, Support/Acceptance,Impulsivity,School Problems, Insecurity,Competition,Body Concerns,Negative Self Concept)a rating system was applied due to the following reasons:(1)the indicators for these dimensions are generally much more specific than the previously discussed dimensions,(2) there is more evidence that researchers and experts place more significance on some signs for each dimension,(3)many of the indicators for some of the dimensions have been supported by more than one researcher or clinical expert and (4) due to the large number of indicators for each dimension in comparison to the previously mentioned dimensions, a more systematic and applicable system is considered appropriate.

All of the dimensions and associated indicators were derived from several research and clinical publications (Bennett,1968;Britain,1970; Coopersmith et. al.,1976;Dileo,1973,1984;Exner,1962;Fuller,et.al.,1970; Handler & Reyer,1964;Kaufman & Burns,1970,72;Klepsch & Logie,1982; Koppitz,1968;Reynolds,1978;Sarbaugh,1982;Wadeson,1980). The rating system was developed by accumulating all of the indicators of the above dimensions (depression,Isolation,etc.) from the literature and ranking them with respect to their significance. Significance was determined by reviewing the clinical and experimental support for these indicators. For example, if clinical experts (Kaufman and Burns,1970,72;Dileo,1973, 83;Klepsch and Logie,1982;Sarbaugh,1982)emphasized or highlighted certain indicators as representing certain dimensions, the indicators were rated as highly significant ("Strongly Indicated") and given a rating of 3 (See Scoring Guide). If the indicators were less emphasized or not consistently supported by all the experts ,however, were generally supported to indicate certain dimensions and/or the indicators were supported by research they were rated as moderately significant ("Moderately Indicated") and given a rating of 2. If the indicators were minimally noted as representing the respective dimensions or had some theoretical support from the clinical experts and/or received either no support or mixed support from research (particularly with respect to the HFD literature) they were considered minimally significant ("Minimally Indicated") and given a rating of 1. For example,(See Scoring Guide Part 2) for the dimension (feature) entitled "Depression", the following indicators were given a rating of 3 due to the significant and consistent emphasis given to these indicators by clinical experts as representing depression in drawings:(1)No face,(2) Graphic representation of crying/hurting and/or written representation and (3) Water theme. The next set of indicators were given a rating of 2 because of the empirical support of these indicators as representing depression in drawings (Wright,1982):(1)Evidence of withdrawl from significant others,(2)Lack of interest in the enviroment,(3)Uninvolvement, (4)Lack of energy and (5) Sense of hopelessness. The next set of indicators were given a rating of 1 due to their minimal clinical support ,however,some theoretical underpinning: (1)Empty space ,(2)Small figure drawn at or near lower edge, (3)Light wavering lines,(4) Passive activity.

In terms of application, the raters look for the indicators of a particular feature (dimension) and record a rating score for each drawing with respect to each feature.

In order to systematize their rating, assess inter-judge reliablity, obtain a global assessment and compare groups the following approach was used. Each drawing was examined to determine whether each feature (for example,depression) was strongly indicated,moderately indicated minimally indicated or not indicated. In order for the ratings to be standardized and manageable in terms of time, each rater was asked to inspect the drawings at first for evidence of strong indicators. If only one indicator out of the set of indicators was present this was considered sufficient for a rating of 3 for that dimension. If there were no strong indicators present,the raters inspected the drawings for moderate indicators. Similarily as before,if one moderate indicator was present, a score of 2 was recorded.. If there were no moderate indicators present, the raters inspected the drawings for minimal indicators. If one indicator was present a score of 1 was recorded. If there were no indicators present a score of zero was recorded. This same process was repeated for the remaining dimensions and associated indicators.

The major reason for allowing only one indicator to represent the associated dimension and corresponding rating is related to Hammers' (1958) insight and direction with respect to global analysis: "Clues to a persons' personality do not always appear in the same place. A person may reveal trait X in a type of line he draws,another on placement, another in its' size,---and another in pressure--it is the rare experiment that can catch such a complexity. Perhaps, studies employing global analysis prove more effective than those resting on item analysis for this reason." Hammer appears to be supporting the idea that children will represent their feelings, attitudes,and emotions in different ways. The hypothesis that all children will graphically represent their state of being in a similar way appears to be rejected. Rather, if children reveal their personality in drawings it is reasonable to expect a variation of representation. Due to the hypothesis that children will show evidence of their state of being in different ways, the decision to allow any one indicator rather than a particular one or a particular group of indicators to represent the dimension and associated rating score accomodates the expected variation in childrens' drawings. Additional reasons include:(1)there is no support for criterion setting,therefore, combining indicators as a basis for making decisions produces problems in terms of where to set the limit (for example, 3/5 indicators, 6/8 indicators, etc.),(2) There is no information to suggest that any one indicator within each rating scale (Strong,Moderate,Minimal) shows more evidence or is more significant of a particular dimension than the others. and (3) giving each indicator within each scale equal weighting and providing different ratings allows for greater control in terms of scoring and analysis.

The reasons for relying on clinical judgement and inference (experts) over empirical research for scaling the indicators are:(1) lack of empirical validation for reported findings, (2) limited empirical research in the area of family or school drawings,(3)experts' emphasis on indicators is based on thousands of clinical case studies and(4)due to the lack of empirical research and associated information clinical experts provide the major referral source.

In conclusion, it must be stated that the labelling of the dimensions (pathology,depression,etc.)was based on the prevalence of these terms in the literature and associated indicators. For the purposes of this study,they are used as a way to categorize. The relationship between the labels and associated indicators needs to be validated with further research. The intent of this study is to discover whether the indicators associated with these terms are represented in the KSDs within and between two groups of children and not to suggest that if these indicators are revealed then the corresponding dimension is the cause.

## P. Analysis

The analysis of this study was based on both qualitative and quantitative data and interpreted with non parametric statistics. The purpose of the analysis was to gain information with respect to: (1)inter judge reliability,(2)the content of childrens' KSDs, (3)the difference between LDs and NLDs in terms of graphic details and associated categories and (4) normative data.

### Reliability

Inter-judge reliabilities were conducted to investigate judgement accuracy. Percentage agreement across the three raters for drawings 1 to 48 and for the raters of drawings 49 to 96 was evaluated separately for all of the items/categories on scoring sheets Part 1 and Part 2. The inter observer consistency or accuracy assessed with agreement statistics was reported. The reliability evaluation was conducted due to observational instruments (Scoring Sheets) being previously untried.

### Content

The content of the childrens' drawings was analyzed qualitatively and quantitatively. Specifically, the kind of content (ex.,chairs,desks,etc.) and type of activities was listed for within and between both groups. Additionally, the frequencies of their occurrence was recorded. Furthermore, evaluations from raters with respect to the scoring procedure was assessed with an informal questionaire and noted (See Appendix F).

### Group Comparison

This present study's data came from the recorded responses of raters using scoring sheets part 1 and 2. By and large, analysis involved categorical variables at the nominal and ordinal level of measurement.

In terms of scoring sheet part 1 the majority of related hypotheses concerned dichotomous variables at the nominal level of measurement and were tested with Chi square statistics at the .05 level of significance. If significance was found, the cells were partitioned in order to directly compare the proportions between the cells as a means of specifying group differences (Glass and Stanley,1970). If significance was not found, the cells were partitioned to investigate any information that could be considered clinically significant. The remaining hypotheses related to scoring sheet part 1 were concerned with continuous variables and were tested with a one way analysis of variance at the .05 level of significance.

In terms of scoring sheet part 2, all of the hypotheses concerned categorical variables at an ordinal level of measurement and were tested with Chi square statistics at the .05 level of significance. If significance was found with Chi square statistics, the cells were partitioned in order to directly compare the proportions between the cells as a means of specifying group differences. If signifigance was not found, cells were partitioned in order to investigate the results in relationship to what could be considered clinically significant. Additionally, the variables were in an ordered classification or categorization (Kendall,1948), hence Kendall's Tau C was used to measure the association between frequency of response and underlying continuum.

## Normative Data

Essentially, the normative data was based on the description of the groups used in this study and associated research findings.

## Q. Summary

The purpose of this study was to conduct a systematic investigation of the KSD in order to initiate a process towards obtaining information related to the individual and global characteristics of this projective drawing technique, providing normative data with respect to actions, styles and content in school drawings, documenting reliability data , presenting results with respect to the effectiveness of the KSD for differential assessment and promoting further clinical and empirical research with this technique.

In this current study, kinetic school drawings were group administered to an equal number of learning disabled and non learning disabled grade five students. Administration of the drawing procedure was carried out by the teachers of these students according to directions and guidelines provided by the investigator. The students' drawings were sampled from eight schools within one school jurisdiction and evaluated by two sets of three trained raters. These raters rated the drawings with respect to two scoring sheets, a reference guide and rating scale which were specifically designed for the purposes of this study.

This study primarily involved categorical data at the nominal and ordinal level of measurement and employed a two dimensional research design. Chi square statistics were used to analyze the categorical variables and one way analysis of variance was used for the few continuous variables. Additionally, Kendalls Tau C was used for those variables ordered in classification. Multiple comparison procedures (quantitative and qualitative) were used where indicated.

Forty-two hypotheses were tested at the .05 level of significance and all variables were operationally defined. Rater reliability was calculated using percentage of agreement statistics and evaluation of the rating system was informally assessed through the use of a raters' questionaire. The results of the analysis and discussion of these results are presented in chapters 4 and 5.

# IV. Results

This chapter first presents information with respect to the subjects of this study. Second, it will provide data on rater reliability for Scoring Sheet Part I and Scoring Sheet Part 2. Third it will present data related to the hypotheses outlined in the Methods chapter. Hypotheses 1 to 12 (see Hypothesis section, in Chapter 3) pertains to Scoring Sheet Part I and will be examined first. Hypotheses 8 and 9 contain continuous variables and were tested using a one way analysis of variance. Hypothesis number 12 involves one hundred and eleven (111) items (see Dichotomous Dimension, Part I, Appendix, B). Hypotheses 1 to 7 and 10 to 12 were tested using Chi Square at the .05 level of significance. In light of the large number of items in hypothesis12 for comparison by group only those items showing significance ($p<0.05$) will be presented. Next, the hypotheses numbered 13 to 42 which relate to Scoring Sheet Part 2 will be examined. All the hypotheses based from Scoring Sheet Part 2 contain categorigal variables and were tested with Chi Square at the .05 level of significance.

Following the statistical analysis of the data for Scoring Sheets Part 1 and 2 the next section will present qualitative analysis of the data considered to be clinically significant. Finally, results from an informal rater questionaire will be provided and followed by a discussion of all the results in the proceding chapter.

### A. Subjects

The range of age of the 96 grade 5 school subjects was from 117 months (9 years, 9 months) to 150 months (12 years, 6 months). Mean age was 127 months (10 years, 7 months). The current study used two groups of subjects. The non learning disabled group (NLDs) were drawn from a grade five sample of children who did not show evidence of significant learning difficulty and who were considered by their teachers as obtaining typical achievement for their grade level. The learning disabled group (LDs) were drawn from a grade five public school sample who had been classified as being learning disabled by their respective school jurisdiction and were receiving extra instructional services either in a special class as resource roomsetting. This study used 48 LD subjects and 48 NLD subjects. The range of age of the 48 LD subjects was from 117 months (9 years, 9 months) to 150 months (12 years, 6 months). Mean age of the LD group was 125 months (10 years, 5 months). The range of age of the 48 NLD subjects was 120 months (10 years, 0 months) to 149 months (12 years, 5 months). Mean age of NLD group was 129 months (10 years, 9 months). Individual intelligence test scores (WISC-R or Standford-Binet) or group intelligence test scores were unavailable for the subjects of this study. However, 1983-84 scores from the Canadian Cognitive Abilities Test (CCAT) and Edmonton Public School Reading Test (EPRT) were collected. Mean percentile scores for the NLD group with respect to the verbal, quantitative and Non

Verbal categories of CCAT were 66.79, 56.45 and 65.55 respectively. Mean percentile scores for the LD group with respect to the Verbal, Quantitative and Non Verbal categories of CCAT were 45, 48.21 and 53.12. Hence, in terms of mental ability both groups of children are within the average range with LDs revealing lower percentile scores than NLDs across the three major categories. Mean percentile scores for the NLD group with respect to Decoding and Comprehension categories of the EPRT were 52.2 and 56.83 respectively. Mean percentile scores for the LD group with respect to Decoding and Comprehension categories of the EPRT were 25.86 and 30.24 respectively. Hence, LDs generally had lower scores in relation to NLDs in terms of decoding and comprehension skills.

Out of 96 subjects, 55 were boys and 41 were girls. There were 13 girls and 35 boys within the LD group and 28 girls and 20 boys within the NLD group. Hence, in this study there were more boys than girls. A comparison of subjects by group reveals more boys than girls in the LD group and more girls than boys within the NLD group.

**B. Reliabilities**

All items/categories on Scoring Sheets Part 1 and 2 were rated by 6 raters. Due to the large sample size of subjects and items/categories the six raters were divided into two sets with 3 raters each. Raters 1 to 3 rated drawings 1 to 48 and raters 4 to 6 rated drawings 49 to 96.

Both groups of drawings were produced by an equal number of LDs and NLDs. Each rater in each group rated every item/category on both scoring sheets.

In terms of Scoring Sheet Part 1 all of the reliabilities exceptfor those items under the Dichotomous dimension were calculated by taking the sum of unilateral agreements for each item across the three raters of each group dividing the sum by the total number of subjects (drawings) and then multiplying this figure by 100 for percentage of agreement. Hence, for each item every rater had to agree with each other in order for there to be unilateral agreement. If one rater disagreed with another rater with respect to an item it was not included in the summation of agreements. The reliabilities for the one hundred and eleven (111) items under the Dichotomous dimension (see Appendix A) were calculated by summing the percentage of agreement for raters 1 and 2 ( 4 and 5 in the other set of raters), with 1 and 3 (4 and 6 in the other set) and 2 and 3 (5 and 6 in the other set) for a total percentage of agreement for each item in the Dichotomous dimension on Scoring Sheet Part 1.

In terms of Scoring Sheet Part 2 all of the reliabilities were calculated by summing the amount of unilateral agreements for each item across three raters, dividing this figure by the total number of subjects/drawings (48) and multiplying by 100 for percentage of agreement.

## Part 1 Reliabilities

Generally, the average percentage of agreement for the two sets of raters with respect to all items on Scoring Sheet Part 1 was between .70 to 100.0 except for five continuous variables (height and distance) and 4 Dichotomous variables: self turned away from peers, erasures, everyone doing related activities, and simple composition. Out of 133 items, 124 items showed judgement accuracy of .70 and above, between the two sets of raters (see Table 12) which according to some researchers is an acceptable level of agreement (Ferguson, 1984). Specifically, 68 out of 133 items showed an average percentage of agreement between the two sets of raters of .90 and above; 35 out of 133 items showed an average percentage of agreement between the two sets of raters of .80 and above; and 21 out of 133 items showed an average percentage of agreement between the two sets of raters of .70 and above. The primary reason for the low reliability estimates with respect to the continuous variables was due to the lack of precision of recording between the raters. If one or more of the raters disagreed with each other by only .01 it was recorded as non unilateral agreement. If an error of measurement was established for example .1 to .5 centimeters for agreement, the reliabilities for these items would have reached a level of acceptance (pct .70). The primary reason for the low reliabilities on the remaining 4 items is assumed to be due to the ambiguous nature of the item and corresponding lack

Table 12
Interjudge Reliabilities:Part 1

| Percentage among Raters: | Raters 1-3 | Raters 4-6 |
|---|---|---|
| Activity level of Self | 100.00 | 100.00 |
| Activity level of Teacher | 100.00 | 100.00 |
| Activity level of Peers | 100.00 | 100.00 |
| Activity between Self and Teacher | 100.00 | 97.92 |
| Activity between Self and Peers | 81.25 | 97.92 |
| Facial Expression of Self | 81.25 | 70.83 |
| Facial Expression of Teacher | 83.33 | 68.75 |
| Facial Expression of Peer #1 | 81.25 | 68.75 |
| Direction of Self | 87.50 | 83.33 |
| Direction of Teacher | 85.42 | 81.25 |
| Direction of Peer #1 | 89.58 | 79.16 |
| Barriers between Self and Teacher | 97.92 | 91.66 |
| Barriers between Teacher and Peers | 97.92 | 97.96 |
| Barriers between Self and Peers | 97.92 | 93.75 |
| Distance of Self From Teacher | 47.92 | 31.25 |
| Distance of Self From Peer #1 | 43.75 | 31.25 |
| Height of Self | 64.58 | 31.25 |
| Height of Teacher | 70.83 | 47.92 |
| Height of Peers | 75.00 | 64.58 |
| Order of Self | 97.92 | 100.00 |
| Number of Peers Present | 97.92 | 95.83 |
| Location of Self | 97.92 | 72.92 |
| Teacher Missing | 100.00 | 98.61 |
| Self Missing | 100.00 | 100.00 |
| Peers Missing | 100.00 | 100.00 |
| Compartmentalization | 70.83 | 97.22 |
| Edging | 100.00 | 100.00 |
| Encapsulation | 80.56 | 86.11 |
| Lining on the Bottom | 95.83 | 90.28 |
| Lining at the Top | 94.44 | 69.44 |
| Underlining Individual Figure | 88.89 | 97.22 |
| Birds Eye View | 94.44 | 97.22 |
| Self Turned away from Teacher | 73.61 | 88.33 |
| Self Turned away from Peers | 63.81 | 72.22 |
| Figure Rotated (45°) | 87.50 | 91.67 |
| Everyone doing different activity | 77.78 | 88.89 |
| Passive Activity (Self) | 92.67 | 97.22 |
| Passive Activity (Teacher) | 84.72 | 87.50 |
| Passive Activity (Peers) | 90.28 | 97.22 |
| Evidence of Withdrawal (Self) | 97.22 | 97.22 |
| Lack of Interest (Self) | 81.94 | 98.61 |
| Lack of Energy (Self) | 88.89 | 95.83 |
| Sense of Hopelessness(Self) | 98.61 | 100.00 |
| Empty Space | 94.44 | 91.67 |
| Representation of Depression (Self) | 100.00 | 100.00 |
| Uninvolvement (Self) | 94.44 | 95.83 |
| No Face (Self) | 94.44 | 94.44 |
| No Face (Teacher) | 95.83 | 98.61 |

| | | |
|---|---|---|
| No Face (Peers) | 91.67 | 93.06 |
| Light, Wavering Lines | 91.67 | 93.06 |
| Water Present | 95.83 | 98.61 |
| Small Self Figure Drawn | 91.67 | 95.83 |
| Figures Drawn with Much Detail or Effort | 91.67 | 95.83 |
| Figures Portrayed as Dominating or Powerful | 91.67 | 95.83 |
| Excessive Shading | 81.94 | 72.22 |
| Scribbling | 97.22 | 90.28 |
| Cross-hatching | 72.22 | 75.00 |
| Barriers between Figures | 75.00 | 84.72 |
| X's Present | 69.44 | 80.56 |
| Figures in Dangerous Position | 95.83 | 90.28 |
| Missing Essential Body Parts(self) | 86.11 | 62.50 |
| Missing Essential Body Parts (Teachers) | 86.11 | 62.50 |
| Missing Essential Body Parts(Peers) | 90.28 | 76.39 |
| Figures on Back of Page | 90.28 | 90.28 |
| Erasures | 61.11 | 47.22 |
| Repetition of Objects | 59.72 | 95.83 |
| Exaggerated Size of Body Parts | 94.44 | 63.89 |
| Hanging Figures | 90.28 | 98.61 |
| Anchoring | 93.06 | 88.89 |
| Edged Placement of Figures | 73.61 | 90.28 |
| Buttons Drawn | 93.06 | 98.61 |
| Light, Broken or uneven line quality | 95.83 | 98.61 |
| Arm Extension | 63.89 | 79.17 |
| Presence of Lights | 98.61 | 95.83 |
| Tiny Feet | 77.78 | 91.67 |
| Hostility or Anger between Figures | 93.06 | 94.44 |
| Cutting Activity | 100.00 | 100.00 |
| Presence of Weapons or other Harmful Objects | 95.83 | 98.61 |
| Teeth | 100.00 | 97.22 |
| Heavy Line Quality | 77.78 | 68.06 |
| Jagged or Sharp Fingers/Toes | 80.56 | 84.72 |
| Visible Action or verbal Description of Hitting, Yelling, Screaming, Throwing | 95.83 | 85.92 |
| Ballplaying(Alone) | 100.00 | 100.00 |
| Ballplaying (self) with others | 95.83 | 100.00 |
| Evidence of Competition | 93.06 | 92 25 |
| Presence of Sporting Equipment | 95.83 | 90.14 |
| A's Present | 66.67 | 81.69 |
| Representation of Achievement | 94.44 | 91.55 |
| Elevated Figures | 75.00 | 85.92 |
| Power Symbols | 98.61 | 98.59 |
| Exaggerated Size of Figures | 93.06 | 98.59 |
| Muscular Features | 97.22 | 100.00 |
| Phallic Symbols | 94.44 | 97.18 |
| Figures Lacking Clothes | 75.00 | 87.32 |
| Transparent Figures | 84.72 | 92.96 |

| | | |
|---|---|---|
| Figures Representing Sexuality or Seductiveness | 100.00 | 95.77 |
| Breast Emphasis | 94.44 | 98.59 |
| Zipper Drawn | 98.61 | 97.18 |
| Belt Emphasized | 88.89 | 97.18 |
| Evasions | 95.83 | 94.37 |
| Akinesis | 93.06 | 98.59 |
| Self Close to Teacher | 90.28 | 69.01 |
| Self Close to Peers | 90.28 | 62.68 |
| Everyone Doing Related Activities | 56.94 | 74.65 |
| Self Smiling | 80.56 | 85.92 |
| Teachers Smiling | 84.72 | 84.51 |
| Peers Smiling | 79.17 | 83.10 |
| Poor Integration | 94.44 | 87.32 |
| Overworked Lines | 73.61 | 76.06 |
| Broken, Uneven Lines | 91.67 | 71.83 |
| Perseveration | 66.67 | 74.65 |
| Lack of Detail | 88.88 | 71.13 |
| Simple Composition | 38.89 | 57.04 |
| Self Figure Left of Axis | 88.89 | 85.92 |
| Self Figure Right of Axis | 87.50 | 90.14 |
| Self Figure Top of Axis | 91.67 | 94.37 |
| Self Figure Bottom of Axis | 86.11 | 83.10 |
| Excessive Shading of Body Area | 85.72 | 90.14 |
| Numerous Erasures on Body | 69.44 | 87.32 |
| Exaggeration of Body part | 93.06 | 80.28 |
| Part of Body Covered Up (Self) | 84.72 | 93.66 |
| Part of Body Covered Up (Teacher) | 90.28 | 95.77 |
| Part of Body Covered Up (Peers) | 83.33 | 89.44 |
| Hands Hidden(Self) | 73.61 | 91.55 |
| Hands Hidden(Teacher) | 79.17 | 88.73 |
| Hands Hidden(Peers) | 66.67 | 90.85 |
| Extremity Cut off by Paper(Self) | 97.22 | 98.59 |
| Extremity Cut off by Paper (Teacher) | 98.61 | 95.77 |
| Extremity Cut off by Paper (Peers) | 97.22 | 94.37 |
| Animal or Monster Like Appearance of Figures | 98.61 | 94.37 |
| Mechanical Appearance of Figures | 94.44 | 94.37 |
| Large Head (Self) | 90.28 | 90.14 |

of certainty among the raters in terms of what was required for the item to be considered present or not present in the drawing.

**Part 2 Reliabilities**

In terms of Scoring Sheet Part 2 (see Table 13) the average percentage of agreement for the two sets of raters with respect to all items was generally lower than the reliabilities for Part 1 which is primarily due to the more global and less discrete nature of the items as well as the requirement of all items to be rated in relation to a three to four point scale rather than a two point scale most common in Part 1. Generally, the majority of items (18/30) had an average percentage of agreement between the two sets of raters of .70 and above. Specifically, five out of 30 (5/30) items showed relibility estimates between .90 to 100; four out of 30 (4/30) items showed reliability estimates between .80 and .90 and nine out thirty (9/30) showed reliability estimates between .70 and .80. Due to the nature of the rating scale, reliability estimates of .60 to .70 were considered acceptable levels for a percentage of agreement between the two sets of raters in this study and was recorded for 7 out of the 30 items (5/7 pct. > .65, 2/7 <.65). The five items that showed reliability estimates of below .60 were (a) drawing suggests positive self concept, (b) emphasis on structure, (c)drawer is likeable, (d) body concerns and (e) negative self concept, which might be considered to be too ambiguous for reliable and accurate judgement.

In summary, judgement accuracy according to inter judge reliabilities is considered to be very good for 124 of 133

Table 13

Interjudge Reliabilities:Part 2

| Percentage among Raters: | Raters 1-3 | Raters 4-6 |
|---|---|---|
| Drawing Suggests Pathology | 95.83 | 95.83 |
| Drawing Suggests Positive Self Concept | 37.50 | 37.50 |
| Emphasis on Structure | 58.33 | 45.83 |
| Drawer is Likeable | 58.33 | 54.16 |
| Visible Action Agrees with Verbal Description | 85.42 | 97.92 |
| Visible Action and/or Verbal Description appears Strange or unexpected | 87.50 | 83.33 |
| Self or other figures are highly distorted such that without verbal description it would not be recognizable | 93.75 | 100.00 |
| Activity of the Child (Affect) | 66.66 | 79.17 |
| Activity of the Child (Behavior) | 66.66 | 64.58 |
| Activity of the Teacher (Affect) | 58.33 | 62.50 |
| Problems indicated in student/teacher relationship | 68.75 | 72.90 |
| Self and Peers engaged in Activities | 77.08 | 75.00 |
| Problems in Peer Relationship | 77.08 | 81.25 |
| Self Placement | 97.92 | 85.20 |
| Self Behavior | 68.75 | 72.92 |
| Self engaged in | 79.17 | 81.25 |
| (type of behavior) | 79.17 | 81.25 |
| Drawing Indicates | | |
| Depression | 75.00 | 87.50 |
| Isolation/Rejection | 72.92 | 62.50 |
| Anxiety/Conflict | 85.42 | 56.25 |
| Aggression | 68.75 | 68.75 |
| Sexual Concerns | 66.66 | 66.66 |
| Dominance/Power | 81.25 | 91.66 |
| Defensiveness | 91.66 | 89.58 |
| Support/Acceptance | 72.92 | 72.92 |
| Impulsivity | 77.10 | 62.50 |
| School Problems | 79.20 | 72.90 |
| Insecurity/Dependence | 64.58 | 60.42 |
| Competition | 68.75 | 81.25 |
| Body Concerns | 45.83 | 43.75 |
| Negative Self Concept | 54.17 | 43.75 |

items on Scoring Sheet Part 1 and 18 of 30 items for Scoring Sheet Part 2. Due to the nature of the scale and requirements of scoring five (5) continuous items on Part 1 and 7 out of thirty items on Part 2 are considered acceptable. The remaining four (4) items on Part 1 and five (5) items on Part 2 are considered to have questionable reliability.

## Hypotheses For Scoring Sheet Part 1

In this section all of the null hypotheses will be restated followed by a statement as to whether the null hypothesis is accepted or rejected along with a brief discussion of the data.

H 1: There will be no significant difference between the two groups in the type of activity presented for the major figures.

There was a demonstated relationship between selected activity for self, teacher and peers and group, hence hypothesis number one is rejected. First, in terms of self activity, all of the actions were collapsed into the most frequent types of action represented by both groups for statistical comparison (see table 14). The results showed that significantly more NLDs (8/48) than LDs (0/48) portrayed themselves as working with computers ($p<.05$). Second, in terms of teacher activity, whose actions were also collapsed into the most frequently represented, the results showed significant differences of activity by group.

Table 14
Most Selected Activities:Self

| Activity (Action of Self) | LDs N | NLDs N | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| Sitting/Standing | 5 | 2 | 0.62 | NS |
| Playing Games | 8 | 6 | 0.33 | NS |
| Writing/Working on Blackboard | 1 | 5 | 1.60 | NS |
| Mathwork | 1 | 6 | 2.47 | NS |
| Writing/Working at Desk | 4 | 5 | 0.00 | NS |
| Computer Work | 0 | 8 | 6.68 | * |
| Total | 19 | 32 | | |

Total Possible in Each Group=48

NLDs portrayed teachers writing on the blackboard (8/48) and teaching (14/48) significantly more times than LDs (0/8and 6/48 respectively) ($p<.05$). LDs (6/48) portrayed teachers playing significantly more times than NLDs (0/48) ($p<.05$) (see Table 15). Third, in terms of peer activity whose actions were also collapsed according to the most frequently selected activities, the results revealed significant difference of activity by group. NLDs represented their peers doing mathwork (8/48) and computer work (6/48) significantly more times than LDs (0/48 and 0/48 respectively) (see Table 16) at .05 level of significance.

H 2: There will be no significant difference between the two groups in the type of activity represented between the drawer (self) and other major figures.

There was no demonstrated relationship in the type of activities selected between self and peers ($p>.05$, see Table

Table 15
Most Selected Activities:Teacher

| Activity<br>(Action of Teacher) | LDs<br>N | NLDs<br>N | $x^2$ | Sig. at<br>.05(*) |
|---|---|---|---|---|
| Supervising | 5 | 5 | 0.00 | NS |
| Talking | 6 | 4 | 0.55 | NS |
| Writing on Board | 0 | 8 | 6.68 | * |
| Standing/Sitting/Walking | 9 | 5 | 1.34 | NS |
| Disciplining | 5 | 1 | 1.60 | NS |
| Playing | 6 | 0 | 4.44 | * |
| Teaching | 6 | 14 | 4.04 | * |
| **Total** | 37 | 37 | | |
| **Total Possible in Each Group=48** | | | | |

17), however, there was a demonstrated relationship between the type of activity selected between self and teacher by group, hence, hypothesis number 2 is rejected.

In terms of the activity between self and teacher all of the actions were collapsed into the most frequent types of actions represented by both groups (see Table 18). The results showed that significantly more NLDs (9/48) portrayed themselves as having a learning/teaching interaction with their teachers than LDs (1/48) ($p<.05$).

H 3: There will be no significant difference between the two groups with respect to location of self.

There was no demonstrated relationship between location of self and group ($p>.05$) (see Table 19). Thus, hypothesis three stated in null form, cannot be rejected. Subsequent analysis revealed important qualitative information to be presented in a later section.

Table 16
Most Selected Activities:Peers

| Activity (Action of Peers) | LDs N | NLDs N | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| Playing | 13 | 10 | 0.52 | NS |
| Mathwork | 0 | 8 | 6.68 | * |
| Computer | 0 | 6 | 4.45 | * |
| Working on Blackboard | 1 | 6 | 2.47 | NS |
| Working at Desk | 7 | 11 | 1.09 | NS |
| Drawing/Coloring | 5 | 8 | 0.80 | NS |
| Swinging | 5 | 1 | 1.60 | NS |
| Total | 31 | 50 | | |

Total Possible in Each Group>>48
:due to the different numbers of peers
represented across subjects

H 4: There will be no significant difference between the two groups in terms of facial expressions of major figures.

There was no demonstrated relationship between facial expression of major figures and groups (p>.05) (see Table 19), hence, hypothesis four, stated in null form can not be rejected. However, subsequent qualitative analysis revealed clinically significant information which will be presented in a later section.

H 5: There will be no significant difference between the two groups with respect to the direction major figures are facing.

There was no demonstrated relationship between direction of teacher and group (p>.05), however, subsequent qualitative analysis showed clinically significant

Table 17
Most Selected Activities:Self/Peers

| Activity Between Self/Peers<br>Action | LDs<br>N | NLDs<br>N | $x^2$ | Sig. at<br>.05(*) |
|---|---|---|---|---|
| None | 31 | 31 | 0.00 | NS |
| Playing | 6 | 7 | 0.09 | NS |
| Having Picture Taken | 1 | 2 | 0.00 | NS |
| Fighting/Arguing | 2 | 0 | 0.51 | NS |
| Mathwork | 0 | 2 | 0.51 | NS |
| Total | 40 | 42 | | |
| Total Possible in Each Group=48 | | | | |

information which will be provided in a later section.

There was a demonstrated relationship between direction of self and group ($p<.05$) as well as between direction of peer#1 and group ($p<.05$), hence hypothesis number 5 is rejected (see Table 19). First, in terms of direction of self, the results showed that significantly more LDs (32/48) face out of the drawing than NLDs (16/48) and that significantly more NLDs face away from major figures than LDs (6/48 vs 0/48) as well as face major figures (NLDs 20/48, LDs 13/20). Second, in terms of direction of peer #1, significantly more LDs represented peer#1 facing out of drawing (31/48) than NLDs (18/48).

H 6: There will be no significant difference between the two groups in the use of barriers between major figures.

There was no demonstrated relationship between the use of barriers and group ($p>.05$)(see Table 20,21,22), hence, hypothesis number 6 stated in null form can not be rejected.

Table 18
**Most Selected Activities:Self/Teacher**

| Activity Between Self/Teacher:Action | LDs N | NLDs N | x² | Sig. at .05(*) |
|---|---|---|---|---|
| None | 32 | 27 | 1.10 | NS |
| Learning/Teaching | 1 | 9 | 5.47 | * |
| Reprimanding/Disciplining | 1 | 2 | 0.00 | NS |
| Talking | 4 | 3 | 0.00 | NS |
| Throwing Objects | 2 | 0 | 0.51 | NS |
| Arguing | 2 | 0 | 0.51 | NS |
| Singing | 1 | 2 | 0.00 | NS |
| Having Picture Taken | 1 | 2 | 0.00 | NS |
| Total | 44 | 45 | | |
| **Total Possible in Each Group=48** | | | | |

However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section.

H 7: There will be no significant difference between the two groups in terms of the content in the drawings.

There was a demonstrated relationship between the content and group, hence, hypothesis number 7 is rejected. The content of the drawings for both groups was collapsed into the twenty six most frequently represented objects for statistical comparison. Objects were selected if either group represented the object by five (5) or more of its' subjects (see Table 23). The results showed that significantly more NLDs included blackboards, clocks, chairs, computers, and chalk in their drawings than LDs $(p<.05)$. Also, a significantly larger number of LDs included balls,bulletin boards and suns in their drawings than NLDs

Table 19

Chi Square

| Variable | $x^2$ | Sig. at .05(*) |
|---|---|---|
| Facial Expression of Self by Group | 2.061 | .5599 |
| Facial Expression of Teacher by Group | 2.381 | .4972 |
| Facial Expression of Peers by Group | 2.955 | .3987 |
| Direction of Self by Group | 13.818 | .0032 * |
| Direction of Teacher by Group | 7.152 | .0672 |
| Direction of Peers by Group | 8.311 | .0400 * |
| Location of Self by Group | 1.396 | .4976 |
| Order of Self by Group | 2.704 | .7455 |
| Number of Peers by Group | 2.252 | .6896 |

($p<.05$).

H 8: There will be no significant difference between the two groups with respect to the distance between self and the other major figures.

There was no demonstrated relationship between distance of self from major figures and group ($p>.05$). Thus, hypothesis 8, stated in null form, can not be rejected and no subsequent analysis was conducted(see Table 24).

H 9: There will be no significant difference between the two groups with respect to the height of major figures.

There was a demonstrated relationship between the height of self, teacher, peer #1 and group, hence,

Table 20
Most Selected Barriers:Self/Teacher

| Barriers Between Self and Teacher | LDs N | NLDs N | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| None | 16 | 14 | 0.19 | NS |
| Desks/Chairs | 13 | 20 | 0.17 | NS |
| Swings | 3 | 0 | 1.38 | NS |
| Paper | 2 | 0 | 0.51 | NS |
| Computer | 0 | 4 | 2.35 | NS |
| Books | 0 | 2 | 0.51 | NS |
| Total | 39 | 40 | | |
| Total Possible in Each Group=48 | | | | |

hypothesis 9 is rejected (see Table 24). In terms of height of self, the results showed that NLDs (grand mean: 59.396) drew themselves significantly, larger than LDs (grand mean: 44.729)(p.0003). In terms of height of teacher, the results showed that NLDs drew their teacher significantly larger (grand mean: 72.062) than LDs (grand mean: 51.833)(p .0004). In terms of height of peer #1, NLDs drew their first drawn peer significantly larger (grand mean: 55.833) than LDs (grand mean: 42.042).

H 10: There will be no significant difference between the two groups with respect to number of peers presented in the drawing.

There was no demonstrated relationship between the number of peers presented in the drawing and group (see Table 19) (p>.05). Thus, hypothesis 10, stated in null form can not be rejected. However, subsequent qualitative analysis showed clinically significant information which

Table 21
Most Selected Barriers: Teacher/Peers

| Barriers Between Teacher and Peers | LDs N | NLDs N | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| None | 13 | 13 | 0.00 | NS |
| Desks/Chairs | 19 | 24 | 1.05 | NS |
| Swings | 4 | 1 | 0.84 | NS |
| Balls | 2 | 0 | 0.51 | NS |
| Tree | 2 | 0 | 0.51 | NS |
| Computer | 0 | 3 | 1.37 | NS |
| Total | 40 | 41 | | |
| Total Possible in Each Group=48 | | | | |

will be presented in a later section.

H 11: There will be no significant difference between the two groups in terms of order of figures drawn.

There was no demonstrated relationship between the order of peers presented in the drawing and group (p>.05) (see Table 19). Thus, hypothesis 11, stated in the null form can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be provided in a later section.

H 12: There will be no significant difference between the two groups in their preference for clinical signs (Dichotomous Dimension in Scoring Sheet Part 1, see Appendix B).

There was a demonstrated relationship between 19 clinical signs and group, hence, hypothesis 12 is rejected

Table 22
Most Selected Barriers:Self/Peers

| Barriers Between Self and Peers | LDs N | NLDs N | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| None | 15 | 18 | 0.42 | NS |
| Desks/Chairs | 14 | 19 | 1.15 | NS |
| Swings | 4 | 1 | 0.84 | NS |
| Balls | 5 | 0 | 3.38 | NS |
| Computer | 0 | 4 | 2.35 | NS |
| Trees | 2 | 0 | 0.51 | NS |
| Paper | 2 | 0 | 0.51 | NS |
| Total | 42 | 42 | | |

Total Possible in Each Group=48

(see Table 25). The results showed that significantly more LDs (8/48) presented encapusulation than NLDs (1/48) (p<.05). Significantly more NLDs (16/48) presented themselves turned away from teacher than LDs (7/48) (p<.05). Significantly more LDs produced light, wavering lines (7/48) than NLDs (0/48) (p<.05). Significantly more LDs presented excessive shading (9/48) than NLDs (1/48) (p<.05). Significanlty more LDs (6/48) showed figures in a dangerous position than NLDs (0/48) (p<.05).Significantly more LDs drew figures on the back of the page (6/48) than NLDs (0/48) (p<.05). Significantly more LDs presented hanging figures (6/48) than NLDs (0/48) (p<.05). Significantly more NLDs (9/48) represented anchoring than LDs (2/48) (p<.05). Significantly more NLDs (12/48) presented edged placement of figures than LDs (2/48) (p<.05). Significantly more NLDs (37/48) drew arm extensions than LDs (26/48) (p<.05). Significantly more LDs (8/48) showed anger or hostility between figures than NLDs (2/48) (p<.05). Significantly more LDs (6/48) than NLDs (0/48) drew teeth (p<.05).

Table 23

Most Selected Content

| Content | Frequency NLD (N) | LD (N) | $x^2$ | Sig. at .05(*) |
|---|---|---|---|---|
| 1. Alphabet | 5 | 3 | 0.14 | NS |
| 2. Bulletin Board | 8 | 19 | 6.68 | * |
| 3. Blackboard | 32 | 18 | 8.18 | * |
| 4. Books | 22 | 14 | 2.85 | NS |
| 5. Brushes | 9 | 4 | 2.22 | NS |
| 6. Clock | 11 | 4 | 3.87 | * |
| 7. Chair | 27 | 17 | 4.20 | * |
| 8. Computer | 11 | 0 | 10.27 | * |
| 9. Chalk | 17 | 4 | 8.78 | * |
| 10. Doors | 8 | 15 | 2.80 | NS |
| 11. Desk | 31 | 25 | 1.54 | NS |
| 12. Eraser | 11 | 4 | 2.84 | NS |
| 13. Flag | 6 | 5 | 0.13 | NS |
| 14. Pointer | 7 | 1 | 3.41 | NS |
| 15. Paper | 20 | 15 | 1.12 | NS |
| 16. Poster | 5 | 3 | 0.14 | NS |
| 17. Pencils | 20 | 15 | 1.12 | NS |
| 18. School Building | 5 | 8 | 0.80 | NS |
| 19. Table | 7 | 4 | 0.61 | NS |
| 20. Windows | 5 | 11 | 2.70 | NS |
| 21. Writing on Board | 7 | 2 | 1.96 | NS |
| 22. Ball | 0 | 10 | 9.04 | * |
| 23. Clouds | 0 | 5 | 3.38 | NS |
| 24. Swings | 0 | 5 | 3.38 | NS |
| 25. Sun | 0 | 6 | 4.44 | * |
| 26. Walls | 0 | 5 | 3.38 | NS |
| Total | 274 | 199 | | |

Significantly more LDs (12/48) than NLDs (2/48) showed visible action and/or provided verbal description of hitting, yelling, screaming, etc. ($p<.05$). Significantly more LDs (6/48) NLDs (0/48) showed themselves playing with a ball ($p<.05$). Significantly more LDs (12/48) than NLDs (2/48) showed represented sporting equipment in their drawings. Significantly more LD's (22/48) than NLDs (9/48) drew figures lacking clothes ($p<.05$). Significantly more LDs (6/48) than NLDs (0/48) showed evidence of broken uneven

Table 24

Analysis of Variance

Summary for Distance of Self from Teacher

| SS | MS | F-Ratio | DF | Prob. | Sig. at .05(*) |
|---|---|---|---|---|---|
| 135.37 | 135.38 | 0.06 | 1.0 | 0.8002 | NS |

Summary for Distance of Self from Peer #1

| SS | MS | F-Ratio | DF | Prob. | Sig. at .05(*) |
|---|---|---|---|---|---|
| 260.04 | 260.04 | 0.20 | 1.0 | 0.6520 | NS |

Summary of Height of Self

| SS | MS | F-Ratio | DF | Prob. | Sig. at .05(*) |
|---|---|---|---|---|---|
| 7490.63 | 7490.67 | 14.43 | 1.0 | 0.0003 | * |

Summary Of Height of Teacher

| SS | MS | F-Ratio | DF | Prob. | Sig. at .05(*) |
|---|---|---|---|---|---|
| 9821.26 | 9816.26 | 13.51 | 1.0 | 0.0004 | * |

Summary Of Height of Teacher

| SS | MS | F-Ratio | DF | Prob. | Sig. at .05(*) |
|---|---|---|---|---|---|
| 4565.04 | 4565.04 | 8.90 | 1.0 | 0.0036 | * |

lines ($p < .05$). Significantly more Lds (13/48) than Nlds (2/48) showed lack of detail in their drawings ($p < .05$). Significantly more LDs (6/48) than NLDs (0/48) produced excessive shading of body area ($p < .05$).

Additionally, subsequent qualitative analysis revealed clinically significant information with respect to 37 other clinical signs which will be presented in a later section.

### Hypotheses for Scoring Sheet Part 2

H 13: There will be no significant difference between the two groups with respect to pathologic features.

There was no demonstrated relationship between the representation of pathology and group. There was no drawing that showed pathology, hence, statistics was not computed.

Table 25
Chi Square:Part 1 Dichotomous Variables

| Variable(Dimension) | $x^2$ | Sig. at .05(*) |
|---|---|---|
| Encapsulation | 3.852 | .0497 * |
| Self Turned Away from Teacher | 4.631 | .0314 * |
| Light,Wavering Lines | 5.274 | .0216 * |
| Excessive Shading | 7.114 | .0075 * |
| Figures in Dangerous Position | 6.400 | .0114 * |
| Figures on Back of Page | 6.400 | .0114 * |
| Hanging Figures | 5.274 | .0216 * |
| Anchoring | 5.031 | .0249 * |
| Edged Placement of Figures | 8.362 | .0038 * |
| Arm Extensions | 5.587 | .0181 * |
| Hostility or Anger between Figures | 4.018 | .0450 * |
| Teeth | 4.174 | .0411 * |
| Visible Action or Verbal Description of Hitting, Yelling, Screaming, Throwing, etc. | 8.362 | .0038 * |
| Ball playing (self) with others | 5.274 | .0216 * |
| Presence of Sporting Equipment | 8.362 | .0038 * |
| Figures Lacking Clothes | 8.051 | .0045 * |
| Broken, Uneven Lines | 3.852 | .0497 * |
| Lack of Detail | 9.560 | .0020 * |
| Excessive Shading of Body Area | 5.274 | .0216 * |
|  | N=96 | DF=1 |

Thus, hypothesis 13 can not be rejected and no further analysis was necessary.

H 14: There will be no significant difference between the two groups with respect to the positive self concept feature.

There was no demonstrated relationship between positive self concept and group (see Table 26.1). Thus, hypothesis 14, stated in null form, can not be rejected. However, Kendalls' Tau C (see Table 26.2) showed a significant negative association (.0205) with respect to the categorized scale. The results generally showed that more drawings of LDs and NLDs were rated as providing evidence of positive self concept, (57,3%) followed by no (25%) and uncertain (17.7%) evidence respectively. Additionally, subsequent qualitative analysis revealed clinically significant information which will be presented in a later section.

H 15: There will be no significant difference between the two groups in terms of the structure feature.

There was a demonstrated relationship between the representation of structure and group, hence, hypothesis 15 is rejected. Significantly more NLDs (15/48) than LDs (3/48) showed evidence of structure in their drawings ($p<.05$) (see Table 26.1). Additionally, Kendalls Tau C revealed a significant negative association (.0006) with respect to the categorical scale (See Table 26.2). Generally, more drawings by LDs and NLDs were rated as either showing evidence or no evidence of structure (99%) than rated as uncertain (1%). Specifically, the majority of subjects from both groups were rated as showing no evidence of structure (80.2%) compared to 18.8% of the population showing evidence.

H 16: There will be no significant difference between the two groups in terms of the likeability feature.

Table 26.1
Chi Square:Part 2 Variables

| Variable(Dimension) | $x^2$ | Sig. at .05(*) |
|---|---|---|
| Pathology | NC | .0000 |
| Positive Self-Concept | 5.396 | .0673 |
| Structure | 10.571 | .0051 * |
| Likeability | 15.320 | .0005 * |
| Agreement between Verbal Description and Visible Action | 2.099 | .3501 |
| Strange/Unexpected Representations | 4.174 | .0411 * |
| Figure Distortion | 2.043 | .3601 |
| Activity of Child(Affect) | 7.129 | .0679 |
| Activity of Child(Behavior) | 6.133 | .0466 * |
| Activity of Teacher(Affect) | 6.087 | .0783 |
| Problems in Student/ Teacher Relationship | 5.897 | .0524 |
| Activites of Self and Peers(Affect) | 5.789 | .0524 |
| Problems in Peer Relationsip | 4.281 | .1176 |
| Placement of Self | 10.467 | .0053 * |
| Behavior of Self | 9.546 | .0035 * |
| Academic Behavior of Self | 10.455 | .0151 * |
| Depression | 9.506 | .0233 * |
| Isolation/Rejection | 6.293 | .0983 |
| Anxiety/Conflict | 5.809 | .1213 |
| Aggression | 5.446 | .1419 |
| Sexual Concerns | 8.635 | .0346 * |
| Dominance/Power | 1.200 | .5488 |
| Defensiveness | 1.103 | .2935 |
| Support Acceptance | 4.753 | .1908 |
| Impulsivity | 19.030 | .0003 * |
| School Problems | 8.647 | .0344 * |
| Insecurity/Dependence | 6.956 | .0733 |
| Competition | 8.453 | .0375 * |
| Body Concerns | 4.548 | .2080 |
| Negative Self-Concept | 0.251 | .8821 |

There was a demonstrated relationship between likeability and group, hence, hypothesis 16 is rejected. Significantly more NLDs (44/48) than LDs (28/48) were rated as likeable ($p<.05$) (see Table 26.1). Additionally, Kendalls' Tau C showed a significant negative association (.0002) with respect to the categorical scale (See Table 26.2). Generally, more LDs and NLDs were rated as showing

**Table 26.2**
**Kendalls Tau C : Part 2 Variables**

| Variable(Dimension) | Kendalls (Value) | Sig. at .05(*) |
|---|---|---|
| Pathology | NC | .0000 |
| Positive Self-Concept | -0.215 | .0205 * |
| Structure | -0.264 | .0006 * |
| Likeability | -0.321 | .0002 * |
| Agreement between Verbal Description and visible Action | -0.062 | .0868 |
| Strange/Unexpected Representations | 0.083 | .0211 * |
| Figure Distortion | 0.000 | .5000 |
| Activity of Child(Affect) | -02189 | .0077 |
| Activity of Child(Behavior) | -0.085 | .1593 |
| Activity of Teacher(Affect) | -0.222 | .0074 * |
| Problems in Student/ Teacher Relationship | 0.173 | .0103 * |
| Activites of Self and Peers(Affect) | -0.168 | .0312 * |
| Problems in Peer Relationship | 0.019 | .3572 |
| Placement of Self | -0.296 | .0006 * |
| Behavior of Self | -0.226 | .0086 * |
| Academic Behavior of Self | -0.260 | .0070 * |
| Depression | -0.201 | .0115 * |
| Isolation/Rejection | -0.139 | .1035 |
| Anxiety/Conflict | -0.105 | .1472 |
| Aggression | -0.204 | .0289 * |
| Sexual Concerns | -0.244 | .0072 * |
| Dominance/Power | 0.001 | .4895 |
| Defensiveness | -0.063 | .1480 |
| Support Acceptance | -0.081 | .2241 |
| Impulsivity | -0.438 | .0000 * |
| School Problems | -0.278 | .0066 * |
| Insecurity/Dependence | 0.273 | .0058 |
| Competition | -0.1215 | .0784 |
| Body Concerns | -0.089 | .2018 |
| Negative Self-Concept | 0.051 | .3127 |

evidence of likeability 75% than no (7.3%) and uncertain (17.7) evidence. More LDs (13/48) were rated in the uncertain category than NLDs (4/48).

H 17: There will be no significant difference between the two groups with respect to the drawers ability to match his/her visible action with his/her verbal description.

There was no demonstrated relationship between the drawers ability to match visible action with verbal description, hence, hypothesis 17 can not be rejected. However, subsequent qualitative analysis revealed clinically significant information which will be presented in a later section.

H 18: There will be no significant difference between the two groups in terms of strangeness or unexpectedness.

There was a demonstrated relationship (see Table 26.1) between the strangeness or expectedness of the drawings and group, hence, hypothesis 18 is rejected. Significantly more LDs (6/48) than NLDs (0/48) drew pictures that were considered strange or unexpected by the raters. Additionally, Kendalls' Tau C (see Table 26.2) revealed a significant positive association (.0211) with respect to the categorical scale. Generally, more LDs and NLDs were rated as showing no evidence of strangeness or unexpectness in their drawing (95.8%) than showing evidence (4.2%). Additionally none of the raters were uncertain about whether any of the drawings were strange or unexpected.

H 19: There will be no significant difference between the two groups with respect to self or other figures being highly distorted such that without verbal description it would not be recognizable.

There was no demonstrated relationship between figure destortion and group, hence, hypothesis 19 can not be rejected. However, subsequent qualitative analysis revealed clinically significant information which will be provided in a later section.

H 20: There will be no significant difference between the two groups in the quality of self activity.

There was no demonstrated relationship between the quality of self activity and group, hence, hypothesis 20 can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section. Additionally, Kendalls Tau C (see Table 26.2) showed significant negative association (.0077) with respect to the categorical scale. Generally, more LDs and NLDs were rated positively in terms of quality of self activity (75%) than neutral and negative (17.8%) and uncertain (7.3%).

H 21: There will be no significant difference between the two groups with respect to similarity of self activity with significant others.

There was a demonstrated relationship between similarity of activity and group ($p<.05$), hence, hypothesis 21 is rejected. The results show significantly more LDs

(12/48) representing their activity as being different than their peers compared to NLDs (4/48).

H 22: There will be no significant difference between the two groups with respect to the quality of teachers activity.

There was no significant relationship between the quality of teacher activity and group, hence, hypothesis 22 can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section. Additionally, Kendalls Tau C (see Table 26.2) showed a significant negative association (.0074) with respect to teh categorical scale. Generally, more LDs and NLDs were rated in as showing a positive quality of teacher activity (74%) followed by neutral (13.5%), negative (6.3%) and uncertain (6.3%) respectively.

H 23: There will be no significant difference between the two groups with respect to student/teacher ralationship.

There was no demonstrated relationship between student/teacher relationship and group, hence, hypothesis 23 can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section. Additionally, results from Kendalls' Tau C showed (see Table 26.2) a significant positive association (.0103) with respect to the categorical scale. Genarally, a minority of LDs and NLDs were rated as showing evidence of problems in terms student/teacher relationship (8.3%). Where as a majority of LDs and NLDs represented student/teacher relationships as having no evidence of problems (84.4%) according to the rating scale.

H 24: There will be no significant difference between the two groups with respect to the quality of self/peer activity

There was no demonstrated relationship between quality of self/peer activity and group, hence, hypothesis 24 can not be rejected. Results from Kendalls' Tau C reveal a significant negative association (.0312) with respect to the categorical scale (see Table 26.2). Generally, the majority of LDs and NLDs were rated as showing positive self/peer activities (75%) compared to neutral, negative and uncertain (25%) respectively. No subsequent analysis was necessary.

H 25: There will be no significant difference between the two groups with respect to peer relationships.

There was no demonstrated relationship between peer relationships and group, hence, hypothesis 25 can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will presented in a later section.

H 26: There will be no significant difference between the two groups in terms of self placement.

There was a demonstrated relationship between self placement (see Table 26.1) and group (p<.05), hence, hypothesis 26 is rejected. The results showed that significantly more NLDs were rated as placing themselves within the school (42/48) compared to LDs (28/48) and that significantly more LDs (15/48) were rated as placing themselves outside of school compared to NLDs (5/48). Additionally, the results of Kendalls' Tau C showed (see Table 26.2) a significant negative association (.0006) with respect to the categorical scale. Generally, more LDs and NLDs were rated as representing themselves within school (72.9%) than outside school (20.8%) and uncertain (6.3%) respectively.

H 27: There will be no significant difference between the two groups in terms of quality of self behaviour.

There was a demonstrated relationship between quality of self behaviour and group, (p<.05) hence, hypothesis 27 is rejected (see Table 26.1). The results show significantly more NLDs (40/48) were rated as showing desireable behaviour than LDs (28/40) and significantly more LDs (12/48) were rated as showing undesireable behaviour (12/48) than NLDs (2/48). Additionally, Kendalls' Tau C (see Table 26.2) revealed a significant negative association (.0086) with respect to the categorical scale. Generally, the majority of subjects (NLDs and LDs) were rated as showing desireable behaviour (70.8%) compared to undesireable (14.6%) and uncertain (14.6%) respectively.

H 28: There will be no significant difference between the two groups in terms of academic engagement.

There was a demonstrated relationship between the two groups in terms of academic engagement. Thus, hypothesis 28 is rejected (see Table 26.1). The results showed that significantly (p<.05) more NLDs were rated as showing academic behaviour (30/48) compared to LDs (15/48) and significantly more LDs (p<.05) were rated as showing non academic behaviour (29/15) than NLDs (15/48). Additionally, Kendalls Tau C (see Table 26.2) showed a significant negative association (.0070) with respect to the categorical scale. Generally, the majority of subjects (NLDs and LDs) were rated as showing academic behaviour (46.9%) compared to non academic behaviour (45.8%) and uncertain (7.3%) respectively.

H 29: There will be no significant difference between the two groups in terms of the rating for depression.

There was a demonstrated relationship between the rating of depression and group. Thus, hypothesis 29 is rejected. The results show (see Table 26.1) that significantly more (p<.05) NLDs (41/48) were rated as showing no evidence of depression compared to LDs (32/48) and that significantly more LDs (7/48) were rated as showing maximum evidence of depression than NLDs (0/48). Additionally, the results from Kendalls Tau C show a significant negative association (.0115) with respect to the categorical scale (see Table 26.2). Generally, the majority of subjects (LDs and NLDs) were rated as showing no evidence of depression (76.0%) compared to the other components of the scale; thus, minimal evidence (7.3%), moderate evidence (9.4%) and maximum evidence (7.3%) were rated as less frequently occuring.

H 30: There will be no significant difference between the two groups in terms of the rating for isolation/rejection.

There was no demonstrated relationship (see Table 26.1) between the rating for isolation/rejection and group, hence, hypothesis 30 stated in the null form can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section.

H 31: There will be no significant difference between the two groups in terms of the rating for anxiety/conflict.

There was no demonstrated relationship between the rating for anxiety/conflict and group (see Table 26.1), hence, hypothesis 31, stated in null form, can not be rejected. However, subsequent qualitative analysis revealed clinically significant information which will be presented in a later section.

H 32: There will be no significant difference between the two groups in terms of the rating for aggression.

There was no demonstrated relationship between the rating for aggression and group, hence, hypothesis 32, stated in null form can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section. Additionally, results from Kendalls Tau C showed a significant negative association (.0289) (see Table 26.2) with respect to the categorical scale. Generally, the majority of subjects (LDs and NLDs) were rated as showing no evidence of aggression (54.2%) compared to the other categories, hence minimal evidence (8.3%), moderate evidence (19.8%) and maximum evidence (17.7%) were rated as less frequently occuring.

H 33: There will be no significant difference between the two groups in terms of the rating for sexual concerns.

There was a demonstrated relationship between the rating for sexual concerns and group ($p<.05$), hence, hypothesis 33 is rejected. The results (see Table 26.1) show that significantly more NLDs (36/48) were rated as showing no evidence of sexual concerns compared to LDs (24/48) and that more LDs (23/48) were rated as showing minimal evidence of sexual concerns than NLDs (11/48). The results from Kendalls' Tau C (see Table 26.2) showed a significant negative association (.0072) with respect to the categorical scale. Generally, the majority of subjects (NLDs and LDs) were rated as showing no evidence of sexual concerns (62.5%) compared to the other categories, further more, the other categories: minimal evidence (35.4%), moderate evidence (1.0%) and maximum evidence (1.0) were rated as less frequently occuring. Additionally, subsequent qualitative analysis showed clinically significant information which will be presented in a later section.

H 34: There will be no significant difference between the two groups in terms of the rating for dominance/power.

There was no demonstrated relationship between the rating for dominance/power and group (see Table 26.1) hence, hypothesis 34 stated in null form can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section.

H 35: There will be no significant difference between the two groups in terms of the rating for defensiveness.

There was no significant relationship between the rating for defensiveness and group, hence, hypothesis 35, stated in null form can not be rejected (see Table 26.1). However, subsequent qualitative analysis showed clinically significant information which be presented in a later section.

H 36: There will be no significant difference between the two groups in terms of the rating for support/acceptance.

There was no significant relationship between the rating for support/acceptance and group (see Table 26.1) hence, hypothesis 36 can not be rejected. However, subsequent qualitative analysis showed clinically significant information which will be presented in a later section.

H 37: There will be no significant difference between the two groups in terms of the rating for impulsivity.

There was a demonstrated relationship between the rating for impulsivity and group, (p<.05) hence, hypothesis 37 is rejected (see Table 26.1). The results show that significantly more NLDs (13/48) were rated as showing no evidence of impulsivity compared to LDs (6/48); more NLDs (26/48) were rated as showing minimal evidence of impulsivity compared to Lds (15/48) and that more LDs (21/48) were rated as showing maximum evidence of impulsity than NLDs (3/48). Additionally, the results of Kendalls' Tau C (see Table 26.2) showed a significant association (.0000) with respect to the categorical scale. Generally, the majority of subjects (LDs and NLDs) were rated as showing minimal evidence of impulsivity (42.7%) followed by maximum evidence (25.0%), no evidence (19.8%) and moderate evidence (12.5%) respectively.

H 38: There will be no significant difference between the two groups in terms of the rating for school problems.

There was a demonstrated relationship between the rating for school problems and group (p<.05), hence, hypothesis 38 is (see Table 26.1) rejected. The results showed that significantly more NLDs (17/48) were rated as revealing minimal evidence of school problems than LDs (9/48) and that more LDs (27/48) were rated as showing maximum evidence of school problems compared to NLDs (13/48). Additionally, the results of Kendalls Tau C(see

Table 26.2) showed a significant negative association (.0066) with respect to the categorical scale. Generally, the majority of subjects (NLDs and LDs) were rated as showing maximum evidence of problems (41.7%) in relation to the other categories. Subjects rated as showing no evidence represented 14.6% of the population, minimal evidence accounted for 27.1% of the subject population and the moderate evidence category accounted for 16.7% of the population. Collectively, categories not evident to moderate show a higher percentage of rating (58.4%) than the maximum category (41.7%).

H 39: There will be no significant difference between the two groups in terms of the rating for insecurity.

There was no demonstrated relationship between the rating for insecurity and group, as stated in null form, hence, hypothesis 39 can not be rejected. However, results from Kendalls Tau C showed a significant positive association (.0058) (see Table 26.2) with respect to the categorical scale. Generally, more subjects (LDs and NLDs) were rated as showing no evidence of insecurity (21.9%) and minimal evidence (13.5%) compared to maximum evidence (11.5) with moderate evidence accounting for the majority of rated response (53.1%). Additionally, subsequent qualitative analysis revealed clinically significant information which will be presented in a later section.

H 40: There will be no significant difference between the two groups in terms of the rating for competition.

There was a demonstrated relationship between the rating for competition and group (p<.05), hence, hypothesis 40 is rejected (see Table 26.1). The results show that more NLDs (41/48) were rated as showing no evidence of competition than LDs (34/48) and that more LDs (9/48) were rated as showing moderate evidence of competition than NLDs (1/48).

H 41: There will be no significant difference between the two groups in terms of the rating for body concerns.

There was no relationship between the rating for body concerns and group. Thus, hypothesis 41 can not be rejected. Further qualitative evidence will be presented later.

H 42: There will be no significant difference between the two groups in terms of the rating for negative self concept.

There was no demonstrated relationship between the rating for negative self concept and group, hence, hypothesis 43 can not be rejected. Further qualitative analysis will be presented later.

## C. Summary

In summary, eighteen out of 42 hypotheses (18/42) were rejected at the .05 level of significance. In terms of scoring sheet part 1, six out of twelve (6/12) hypotheses were rejected and in terms of scoring sheet part 2, twelve out of thirty hypotheses were rejected (12/30).

Out of the eighteen hypotheses that were rejected at the .05 level of significance, three of the variables: height of major figures, structure and likeability of drawer demonstrated poor inter-rater reliability estimates (<.6), hence, the results pertaining to these variables could considered tenuous. None of the items within the dichotomous dimension which showed low reliability estimates (self turned away from peers, erasures, everyone doing related activities and simple composition) demonstrated significant relationship with group.

The results from Kendalls Tau C showed that for the 9 items that were rated according to yes, no and uncertain criteria (see Scoring Sheet Part 2, Appendix C), four out of the 9 (4/9) demonstrated a significant negative association with respect to the relationship between frequency of occurence and the categorical scale, one out of nine (1/9) demonstrated a significant positive association, three out of nine (3/9) demonstrated a non significant positive association and for one out of nine (1/9) statistics was not computed (see Table 26).

In terms of Scoring Sheet Part 2, the following variables showed a significant negative association in relation to the categorical scale: drawing suggests positive self-concept, emphasis on structure, drawer is likeable and visible action agrees with verbal description. In terms of Kendalls Tau, the LD scores tended to show lower frequencies compared to NLDs with respect to the 'yes' criterion and higher frequencies with respect to the 'no' and 'uncertain' criterion with the reverse tendency for NLD scores. In terms of total percentages, the results indicate that for these items the majority of drawings showed evidence of these demensions with fewer showing no evidence and uncertain evidence respectively. Problems indicated in student teacher relationship showed a significant positive association with respect to the categorical scale and indicates that pairs of responses were generally in agreement. The following variables showed a non significant positive association with regards to the categorical scale: visible action and/or verbal description appears strange or unexpected, self or other figures are highly destorted such that without verbal description it would not be recognizeable and problems indicated in peer relationship. Finally, none of the drawings were rated as showing pathology and none of the raters appeared uncertain about the rating of their drawings in regards to this dimension, hence, no statistics were computed.

The results from Kendalls Tau C showed that for the three items that were rated according to positive, neutral, negative and uncertain criteria all three items demonstrated a negative association with respect to the frequency of occurence and the categorical scale. This result indicates an inverse relationship between the ranking of group and scale. Total percentage statistics indicates that in terms of activity of child (affect), activity of teacher (affect) and the activities of self and peers, the majority of drawings showed positive and/or neutral evidence with respect to these items with fewer drawings showing negative and/or uncertain evidence .

The results from total percentages showed that the item that measures whether the childs' activity (behavior)in the drawings is similar or unsimilar to peers, the majority of drawings significantly indicated that self behaviour tended to be rated as similar to peers compared to unsimilar and uncertain. For those items measuring placement, behaviour and type of activity of self, the results from Kendalls Tau C showed a significantnegative association between these variables and the categorical scale. This result indicates an inverse relationship between ranking of group and ranking of rating scale. Total percentages from the contingency tables showed that the majority of drawings were rated as showing evidence of within school placement, desireable behaviour and academic activity compared to the other options for each item.

Finally, the results from Kendalls Tau C showed that out of the 14 items measuring psychological constructs (for ex., depression, anxiety etc. See Appendix C), six out of fourteen (6/14) showed significant negative association between those variables and the categorical scale, six out of fourteen (6/14) showed nonsignificant negative association, one out of fourteen (1/14) showed a significant positive assocaition and one out of fourteen (1/14) showed a non significant positive associaiton.

Total percentages from the contingency tables showed that items measuring depression, aggression, sexual concerns, impulsivity, school problems, and insecurity the majority of drawings were rated as showing no evidence to minimal evidence with fewer drawings rated as showing moderate to maximum evidence of these psychological dimensions. In terms of isolation, anxiety, defensiveness, support, competition, body concerns and the majority of drawings were rated as showing no evidence to minimal evidence compared to moderate to maximum evidence, however, not so uniformly as will be noted in the discussion section. In terms of dominance, insecurity and negative self-concept the majority of rating tended to show more evidence of moderate to maximum degrees of these dimensions than minimal or no evidence.

Overall, the results from the quantitative analysis revealed three major findings. First, the majority of items can be reliably assessed across two sets of raters. Second, learning disabled children appear to differ from non learning disabled children in this study on many drawing features. Third, according to the results associated with Scoring Sheet Part 2, the rating of drawings generally reflected a more positive than negative trend with respect to the global dimensions.

## Qualitative Analysis

The last section presented the results of a test of 42 hypotheses. This section presents clinically significant information based on subsequent qualitative analysis. Qualitative analysis involved examining the results in relation to three main areas (1) action and content represented in the drawings, (2) frequency distributions reaching statistical significance and (3) infrequent response. These areas are considered clinically significant due to the potential trends they could be revealing with respect to personally variables and patterns of interaction of both individual and group.

This section will first present information considered clinically significant from Scoring Sheet Part 1 and then information considered clinically significant from Scoring Sheet Part 2. In terms of Scoring Sheet Part 1, information will be presented in relation to the three general dimensions: Descriptive Dimension, Continuous Dimension and Dichotomous Dimension respectively (see Appendix B).

## D. Scoring Sheet Part 1:Descriptive Dimension

### Activity Level of Major Figures

In terms of activity level, the activities of Peer #1 to Peer #4 (see Appendix B) were collapsed into peer activities in general due to the inconsistent representation of more than one peer across the subjects. The activities of self, teacher and peers were collapsed into the most common or most frequently represented activities (see Tables 14, 15, 16) in order that both statistical and qualitative comparisons could be more effectively made. Activities were recorded as most common if one of the groups (LD or NLD) represented the activity five (5) or more times.

In terms of self activity (see Table 14) the most common forms of activity that the subjects from both groups represented themselves doing were (1)sitting and/or standing, (2) playing games, (3)writing on the blackboard, (4) mathwork, (5) writing and/or working at their desk and (6) computer work. In relation to these common activities the majority of LDs represented themselves as standing and/or sitting, playing games and writing or working at their desk. The majority of NLDs appear to be more diversified in relation to these common activities representing themselves relatively equally across all activities except for sitting or standing (2/48). Additionally, more NLDs (32/48) represented themselves in these common activities than LDs (19/48).

In terms teacher activity (see Table 15) the most common forms of activity that the subjects from both groups represented their teachers doing were (1) supervising, (2) talking, (3) writing on the board, (4) standing, sitting or walking, (5) disciplining, (6) playing and (7) teaching.

In relation to these common activities the majority of LDs represented their teachers relatively equally across these activities. None of the LDs represented their teachers writing on the board and most common single teacher activity was standing, sitting or walking (9/48). The majority of NLDs showed their teachers supervising, talking, writing on the board and standing, sitting or walking. None of the NLDs portrayed their teacher as playing and only one represented their teacher as diciplining. The most common single activity of teacher was teaching (14/48). Additionally, an equal number of LDs and NLDs (37/48) represented their teachers in these common activities.

In terms of peer activity (see Table 16) the most common forms of activity that both groups (LD or NLD) represented their peers doing were (1) playing, (2) mathwork, (3) computer work, (4) working on the blackboard, (5) working at their desk, (6) drawing or colouring and (7) swinging. In relation to these common activities the majority of LDs represented their peers playing, working at their desk, drawing or colouring and swinging. None of the LDs portrayed their peers as working on the computer or doing mathwork and only one portrayed their peers as writing on the blackboard. The most common single activity of peers for LDs was playing. The majority of NLDs appear more diversified in relation to these activities representing their peers relatively equally across all common activities except for swinging which was represented once. Generally, more peer activities were represented within the NLD group (50) than LD group (31).

In terms of other activities selected by LDs and NLDs for self, teacher and peers the results revealed further information. In terms of self activity 14 additional activities were represented by LDs and NLDs, however, less frequently (<5/48). In relation to the least common (see Table 27.1) activities, the majority of LDs represented themselves as dancing, having their picture taken, reading, listening or questioning their teacher, throwing objects, spelling, copying, drawing or art work and fighting or arguing. The following activities were only represented once within the LD group: singing, skipping and talking. Additionally, none of the LDs portrayed themselves as baking or eating. The majority of NLDs represented themselves as dancing, having their picture taken and listening or questioning the teacher. The following activities were only represented once within the NLD group: reading, throwing objects, singing, baking, skipping, talking, eating, and copying. Additionally, none of NLDs portrayed themselves as spelling, drawing or doing art work and fighting or arguing. In terms of these least frequently selected self activities

Table 27.1
Least Selected Activities:Self

| Action of Self | LD (N) | NLD (N) |
|---|---|---|
| Dancing | 2 | 2 |
| Having Picture Taken | 2 | 2 |
| Reading | 3 | 1 |
| Listening/Questioning Teacher | 3 | 4 |
| Throwing Objects | 4 | 1 |
| Spelling | 2 | 0 |
| Singing | 1 | 1 |
| Baking | 0 | 1 |
| Skipping | 1 | 1 |
| Talking | 1 | 1 |
| Eating | 0 | 1 |
| Copying | 2 | 1 |
| Drawing/Art Work | 4 | 0 |
| Fighting/Arguing | 4 | 0 |
| **Total** | 29 | 16 |
| **Total Possible:** | 48 | |

more LDs represented themselves as throwing objects (4/48), drawing or doing art work (4/48) and fighting or arguing (4/48) than NLDs (1/48, 0/48, 0/48 respectively).

In terms of teacher activity, 9 additional activities were represented by LDs and/or NLDs, however, less frequently (<5/48). Out of these 9 activities (see table 27.2) LDs represented their teachers as marking papers, sleeping, helping students and having their picture taken. NLDs also represented their teachers as doing these activities, however, represented them doing other activities which were not portrayed in the LD group. These activities included dropping a puck, sculpturing, getting clay, directing singing and praising.

In terms of peer activity (see Table 27.3) the next most common activities in terms of frequency represented by LDs (>3 and <5) were talking, watching or listening,

Table 27.2
Least Selected Activities:Teacher

| Action of Teacher | LD (N) | NLD (N) |
|---|---|---|
| Marking Papers | 4 | 3 |
| Sleeping | 3 | 1 |
| Helping Students | 3 | 1 |
| Dropping Puck | 0 | 1 |
| Having Picture Taken | 1 | 1 |
| Sculpturing | 0 | 1 |
| Getting Clay | 0 | 1 |
| Direcing Singing | 0 | 1 |
| Praising | 0 | 1 |
| **Total** | 11 | 11 |
| **Total Possible:** | 48 | |

throwing objects, hitting or fighting and arquing, screaming or yelling. The next most common peer activities (>3 and <5) with respect to frequency represented by NLDs were singing, reading, cutting and watching or listening.

## Activity Between Individual Figures

In terms of activity between individual figures, the activities between self and teacher as well as between self and peers were collapsed into the most common or most frequently selected activities (see Tables 28 and 29) in order that both statistical and qualitative comparisons could be more effectively evaluated. Activities were recorded as most common if one of the groups (LD or NLD) represented the activity two (2) or more times.

In terms of activity between self and teacher (see Table 18) the most common representation for both groups (LD and NLD) was no activity. LDs represented no activity (32/48) more times than NLDs (27/48) however, not

**Table 27.3**
**Least Selected Activities:Peers**

| Action of Peers | LD (N) | NLD (N) |
|---|---|---|
| Singing | 0 | 3 |
| Reading | 1 | 4 |
| Cutting | 0 | 3 |
| Answering Questions | 0 | 1 |
| Posing for Picture | 0 | 2 |
| Skipping/Walking/Running | 2 | 2 |
| Talking | 4 | 2 |
| Watching/Listening | 4 | 4 |
| Standing | 2 | 1 |
| Throwing Objects | 3 | 1 |
| Being Helped by Teacher | 0 | 2 |
| Hitting/Fighting | 3 | 0 |
| Eating | 4 | 0 |
| Arguing/Screaming/Yelling | 3 | 0 |
| **Total** | 24 | 25 |
| **Total Possible >>** | 48 | |

significantly (>.05). In relation to the most frequently selected activities between self and teacher the majority of LDs represented their interaction as talking, throwing objects and arguing (excluding the no activity response). The majority of NLDs represented their interaction with teacher as learning, repremanding or disciplining, talking, singing, and having their picture taken (excluding the no activity response). The above 8 activities constituted the majority of responses for LDs (44/48) and NLD (45/48) groups. The least frequently selected activities between self and teacher for LDs (see Table 18 and 28) were learning or teaching (1/48), repremanding or disciplining (1/48), singing (1/48), having their picture taken (1/48), watching each other (1/48), playing hockey (1/48), writing on the board (1/48) and throwing spitballs (1/48). Of these least frequently selected activities the NLDs did not show any evidence of throwing objects (0/48), arguing (0/48), writing on the board (0/48) or throwing spitballs (0/48) between self and teacher. Their (NLDs) least frequently selected activities between self and teacher were (see Table 28) watching each other (1/48), playing hockey (1/48) and laughing (1/48). Out of all the activities mentioned LDs did not show any evidence of laughing (0/48) between self and teacher.

In terms of activity between self and peers (see Table 17) the most common representation for both groups was no activity (LDs 31/48, NLD 31/48). In relation to the most frequently selected activities between self and peers the majority of LDs (excluding no activity) represented their interaction as playing (6/48) and fighting or arguing (2/48). The majority of NLDs represented their interaction with peers (excluding no activity) in the form of playing (7/48), having their picture taken (2/48) and doing mathwork (2/48).

In terms of other activities selected by LDs between self and peers another eleven (11) activities were represented (see Table 29), however, less frequently (<2). In relation to the least frequently selected activities of LDs and NLDs between self and peers (see Table 17 and Table 29), LDs represented their interaction with peers in the following ways: having their picture taken, throwing spitballs, throwing paper airplanes, swinging, watching each

Table 28
Least Selected Activities:Self/Teacher

| Activity between Self/Teacher<br>Action | Frequency<br>LD | <br>NLD |
|---|---|---|
| Watching Each Other | 1 | 1 |
| Playing Hockey | 1 | 1 |
| Writing on Board | 1 | 0 |
| Throwing Spitballs | 1 | 0 |
| Loughing | 0 | 1 |
| Total | 4 | 3 |
| Total Possible: | 48 | |

other, dancing, riding in a car, erasing the board and listening to each other. The NLDs represented their interaction with peers in the following ways: singing, throwing paper airplanes acting, watching each other, erasing the board and computer assistance. None of the LDs showed evidence of mathwork, singing, acting or computer work and none of the NLDs showed as evidence of fighting or arguing, throwing spitballs, swinging, dancing, riding in a car or listening to each other.

### Facial Expression

Facial expression of Peer 1, 2, 3, and 4 (see Appendix B) was reduced to examining only the facial expression of peer 1 with respect to both statistical and qualitative analysis due to the inconsistent representation of more than one peer by all subjects. In terms of self, teacher and peer 1 there was no significant statistical relationship found between expression of each other figure and group. However, subsequent qualitative analysis revealed unfrequent

Table 29
Least Selected Activities:Self/Peers

| Activity between Self/Peers<br>Action | Frequency<br>LD | <br>NLD |
|---|---|---|
| Singing | 0 | 1 |
| Throwing Spitballs | 1 | 0 |
| Throwing Paper Airplanes | 1 | 1 |
| Swinging | 1 | 0 |
| Watching Each Other | 1 | 1 |
| Dancing | 1 | 0 |
| Riding in Car | 1 | 0 |
| Erasing Board | 1 | 1 |
| Listening | 1 | 0 |
| Computer Assistance | 0 | 0 |
| **Total** | 8 | 6 |
| **Total Possible:** | | 48 |

responses that are clinically noteworthy.

In terms of facial expression of self, a generally equal number of subjects from both groups represented themselves in a very friendly (LDs 17/48 vs NLDs 18/48), friendly (LDs 14/48 vs NLDs 14/48) and neutral (LDs 15/48, NLDs 16/48) manner. However, two subjects from the LD group were rated as representing themselves in an unfriendly manner.

In terms of facial expression of teacher, a generally equal number of subjects from both groups represented their teachers in a very friendly (LDs 16/48 vs NLDs 14/48), friendly (LDs 17/48, NLDs 13/48), and neutral (LDs 15/48 vs NLDs 20/48) manner. However, one subject from the NLD group was noted as representing their teacher in an unfriendly manner.

In terms of facial expression of peer 1, a generally equal number of subjects from both groups represented their first drawn peer in a very friendly (LDs 12/48 vs NLDs 14/48), friendly (LDs 19/48 vs NLDs 13/48) and neutral manner (LD 16/48 vs 21/48). However, one subject from the LD group was rated as representing their first drawn peer in an unfriendly manner (see Table 30).

### Direction of Figures

Direction of Peer #1, 2, 3, and 4 was reduced to only Peer #1 due to the inconsistent representation of more than one peer by all subjects. As discussed earlier, there was a demonstrated relationship between direction of self, Peer #1 and group. Subsequent analysis revealed a relationship between direction of teacher and group that is reaching significance (.0672). The results show that more LDs (33/48) were rated as representing their teacher facing out of the drawing than NLDs (21/48), a relatively equal number of subjects from both groups representing their teacher facing away from major figures (LDs 1/48 vs NLDs 2/48), a relatively equal number of subjects representing their teachers facing into the drawing (LDs 1/48 vs NLDs 3/48) and generally, the majority of subjects from both groups represented their teachers facing out of the drawing and facing major figures (90.7%) than facing away from major figures and facing into the drawing (9.3%) (see Table 30).

Table 30
Qualitatively Signifigant Variables

| Variable | Frequency LD | NLD |
|---|---|---|
| Facial Expression (Self): Unfriendly | 2 | 0 |
| Facial Expression (Teacher): Unfriendly | 0 | 1 |
| Facial Expression (Peers): Unfriendly | 1 | 0 |
| Direction of Teacher: Facing Away | 1 | 2 |
| Direction of Teacher: Facing into | 1 | 5 |
| Order of Self: 5th | 1 | 0 |
| Order of Self: 6th | 1 | 0 |
| Number of Peers: 4 | 3 | 1 |
| Number of Peers: 5 | 2 | 1 |

### Location of Self

Although no demonstrated statistical relationship was found between location of self and group subsequent analysis showed that more subjects from both groups drew themselves closer to their peers (61.5%) followed by next to teacher (27.1%) and isolated from teacher and/or peers (11.5%).

### Barriers Between Figures

In terms of barriers between individual figures; the barriers between self and teacher, teacher and peers as well as self and peers were collapsed into the most common or most frequently selected barriers (see Tables 20, 21, 22) in order that both statistical and qualitative comparisions could be more effectively evaluated. Barriers were recorded as most common if one of the groups (LD or NLD) represented the barrier two (2) or more times. Although there was no demonstrated statistical relationship found between barriers and group there was information derived from qualitative analysis which is considered important.

In terms of barriers between self and teacher (see Table 20) the most common representation for LDs was no barrier (16/48) followed by desks and chairs (13/48). The most common representation for NLDs was desks and chairs (20/48) followed by no barrier (14/20). The other most common barriers for the LD group were swings (3/48) and paper (2/48) which were not represented by the NLD group. The other most common barriers for the NLD group were computers (4/48) and books (2/48) which were not represented as barriers by the LD group. Other less frequently selected barriers (<2) for the LD group (see Table 31) were ruler, table, bulletinboard, hall, sword, car, stick, ball and flagpole. Other less frequently selected barriers by the NLD group were ruler, table, bulletin board, stick, flagpole, ball, tree, bench and sidewalk. No subject in the LD group represented a tree, bench or sidewalk as a barrier and no subject within the NLD group represented a hill, sword, ball, or car as a barrier.

In terms of barriers between teacher and peers (see Table 21) the most frequently selected barrier for LDs was desks and chairs (19/48) followed by no representation of barriers (13/48). The most frequently selected barriers for NLDs was desks and chairs (24/48) followed by no representation of barriers (13/48). Other common barriers for LDs were swings (4/48), balls (2/48) and trees (2/48). Other common barriers for NLDs were computers (3/48). None of the LDs showed evidence of computers as barriers. None of

Table 31
Least Selected Barriers:Self/Teacher

| Barriers between Self/Teacher<br>Barrier | Frequency<br>LD | <br>NLD |
|---|---|---|
| Ruler | 1 | 1 |
| Table | 1 | 1 |
| Bulletinboard | 1 | 1 |
| Hill | 1 | 0 |
| Sword | 1 | 0 |
| Car | 1 | 0 |
| Stick | 1 | 1 |
| Ball | 1 | 0 |
| Flagpole | 1 | 1 |
| Tree | 0 | 1 |
| Bench | 0 | 1 |
| Sidewalk | 0 | 1 |
| **Total** | 9 | 8 |
| **Total Possible:** | | 48 |

the NLDs showe evidence of balls as trees as barriers and only one subject (1/48) represented swings as a barrier. Other less frequently selected barriers by the LD group (<2) between teacher and peers (see Table 32) were ruler, table, hill, flagpole, car, stick, sword, and games. Other less frequently selected barriers by the NLD group (<2) between teacher and peers were ruler, table, flagpole, stick, games, sidewalk and blackboard. None of the LDs showed evidence of sidewalks or blackboards as a barriers and none of the NLDs showed evidence of hills, cars or swords as barriers.

In terms of barriers between self and peers (see Table 22) the most common representation by the LD group was no barrier (15/48) followed by desks and chairs (14/48). The most frequently selected barrier for the NLD group was desks and chairs (19/48) followed by no representation of barriers (18/48). Other frequently selected barriers by the LD group

**Table 32**
**Least Selected Barriers:Teacher/Peers**

| Barriers between Teacher/Peers<br>Barrier | Frequency<br>LD | <br>NLD |
|---|---|---|
| Ruler | 1 | 1 |
| Table | 1 | 1 |
| Hill | 1 | 0 |
| Flagpole | 1 | 1 |
| Car | 1 | 0 |
| Stick | 1 | 1 |
| Sword | 1 | 0 |
| Games | 1 | 1 |
| Sidewalk | 0 | 1 |
| Blackboard | 0 | 1 |
| **Total** | 8 | 7 |
| **Total Possible:** | | 48 |

were balls (5/48), trees (2/48) and paper (2/48). Other frequently selected barriers by the NLD group were computers (4/48). None of the LDs showed evidence of computers as barriers between self and peers and none of the NLDs showed evidence of balls, trees or paper as barriers. Additionally only one of the subjects in the NLD group (1/48) represented swings as abarrier, Less frequently selected barriers by the LD group (<2) were (see Table 33) games, swords, arrows, car, stick and hill. Less frequently selected barriers by the NLDs were games, stick, sidewalk, flagpole, bulletinboard and door. None of the LDs represented sidewalk, flagpole, bulletin board or door as barriers and none of the NLDs represented swords, arrows, cars or hills as barriers.

Table 33
Least Selected Barriers:Self/Peers

| Barriers between Self/Peers<br>Barrier | Frequency<br>LD | <br>NLD |
|---|---|---|
| Games | 1 | 1 |
| Swords | 1 | 0 |
| Arrows | 1 | 0 |
| Car | 1 | 0 |
| Stick | 1 | 1 |
| Sidewalk | 0 | 1 |
| Flagpole | 0 | 1 |
| Hill | 1 | 0 |
| Bulletinboard | 0 | 1 |
| Door | 0 | 1 |
| **Total** | 6 | 6 |
| **Total Possible:** | | 48 |

**Content**

The content from the drawings was collapsed into the most common or most frequently selected content (see Table 23) in order that both statistical and qualitative comparisons could be more effectively made. Content was recorded as being frequent if one of the groups represented a particular object five (5) or more times. Between both groups there were twenty-six (26) common objects represented. As noted earlier, there was a demonstrated statistical relationship between seven of these objects and group (see Table 23). Subsequent analysis revealed further qualitative information. Although not statistically significant, none of the NLDs represented clouds, swings or walls in their drawings where as LDs represented clouds (5/48), swings (5/48) and walls (5/48) in their drawings. Additionally, the most common forms of content (represented 10 or more times) within the LD group were blackboards, books, chairs, doors, desks, paper, pencils, windows and balls. The most common fromsof content within the NLD group were blackboard, books, clocks, chairs, computers, chalk, desks, erasures, paperand pencils.

Results from listing the remaining forms of content or least frequently selected content of LDs and NLDs (see Tables 34 and 35) shows (a) that generally a larger number of objects were drawn by LDs (74) than NLDs (66), (b) that these objects were drawn more times by the LDs (104) than NLDs (98), (c) that by comparing least frequently selected content with most frequently selected content (see table 28, 29, 30) more objects in total were drawn by LDs compared to NLDs, however, the common or most frequently drawn objects were drawn more times by NLDs (274) than LDs (199), and (d) that NLDs did not represent (in addition to most frequently selected content) ants, animals, artwork, boxes, basketball courts, charts, cars, cats, diving boards, dogs, easels, food, gymfloors, glue, ground, hoops, hills, helmets,initials graved in trees, Kleenex boxes, kites, knives, ladders, mudscrapers, marbles, metersticks, paintings, popsicles, punching bags, pencil sharpeners, ribbons, rings, swimming pools slides, scales, steps, spitballs, sandboxes, swords, shields, televisions, teetertotters, volleyballs or wastebaskets in their drawings. LDs did not represent: ABC's charts, apples, battons, baking ingredients, bowls, bells, clay, curbs, cameras, crayons, dice, dolls, frogs, file cabinets, film screens, hockey sticks, headphones, lamps, musical notes, microphones, numbers, number charts, ovens, purses, puppets, projects, pucks, puzzles, stools, sculpture, scissors, spoons, screens, stairs, timetables, toyhouses, worksheets and welcome mats.

## E. Continuous Dimension

### Number of Peers

As noted earlier, no demonstrated relationship was found between number of peers and group (see Table 19). Subsequent qualitative analysis revealed that 50% of the subjects from both groups drew one peer (NLDs 23/48, LDs 25/48), 29% of the subjects from both groups drew two peers (NLDs 15/48, LDs 13/48), 13.5% of the subjects drew three peers in the drawing (NLDs 8/48, LDs 5/48), 4.2% drew 4 peers (NLDs 1/48, LDs 3/48), 3.1% of the subjects drew 5 peers (NLDs 1/48, LDs 2/48) and none of the subjects drew more than 5 peers in their school drawing (see Table 30).

### Order of peers

Although there was no demonstrated relationship between order of peers and group (see Table 19), qualitative analysis of the data shows that the majority of subjects from both groups (79.2%) drew themselves either first or second. In terms of the LD group, 43.8% of the LDs (21/48) drew themselves first, 31.3% of the LDs (15/48) drew

Table 34

Least Selected Content:LD

| Content | Frequency |
|---|---|
| Airplane | 3 |
| Ant | 1 |
| Animal | 1 |
| Art Work | 1 |
| Box | 2 |
| Bench | 1 |
| Basketball Court | 1 |
| Curtains | 1 |
| Calendar | 3 |
| Containers | 2 |
| Chart | 2 |
| Car | 2 |
| Cat | 1 |
| Chimney | 1 |
| Diving Board | 1 |
| Dog | 1 |
| Electrical Outlet | 1 |
| Easel | 1 |
| Flagpole | 4 |
| Flowers | 4 |
| Fence | 1 |
| Food | 1 |
| Flower Pot | 1 |
| Gym Floor | 1 |
| Games | 2 |
| Globe | 1 |
| Glue | 1 |
| Grass | 1 |
| Ground | 1 |
| Hoop Stick | 2 |
| Hill | 2 |
| Helmets | 1 |
| Initials Engraved in Trees | 1 |
| Kleenex Box | 1 |
| Kite | 1 |
| Knife | 1 |
| Ladder | 1 |
| Lights | 2 |
| Mud Scraper | 1 |
| Marbles | 1 |
| Meterstick | 1 |
| Map | 1 |
| Painting | 1 |
| Popsicle | 1 |
| Punching Bag | 1 |
| P.A. Box | 2 |
| Pencil Sharpener | 2 |
| Piano | 1 |

| | |
|---|---|
| Pencil Holder | 1 |
| Picture | 1 |
| Pole | 1 |
| Ribbon | 1 |
| Rope | 1 |
| Roof | 1 |
| Ruler | 1 |
| Rings | 1 |
| Swiming Pool | 1 |
| Slide | 2 |
| School Name | 2 |
| Scale | 1 |
| Side walk | 3 |
| Steps | 1 |
| Shelves | 1 |
| Sign | 2 |
| Spit Balls | 2 |
| Sandbox | 1 |
| Swords | 1 |
| Shields | 1 |
| Television | 2 |
| Trees | 4 |
| Teeter-totter | 1 |
| Volleyball Net | 1 |
| Wastebasket | 2 |
| **Total** | 104 |
| **Total Number of Objects:** | 74 |

themselves second, 12.5% of the LDs (6/48) drew themselves third, 8.3% of the LDs (4/48) drew themselves fourth, 2.1% of the LDs (1/48) drew themselves fifth and 2.1% of the LDs (1/48) drew themselves sixth. In terms of the NLD group, 43.8% (21/48) drew themselves first, 39.6% drew themselves second, 10.4% drew themselves third, 6.3% drew themselves fourth. None of the subjects from the NLD group drew themselves 5th or 6th. No subject from either group drew themselves 7th or greater. Subjects from both groups who drew themselves third or fourth accounted for 18.8% of the frequency distribution. The two LD subjects who drew themselves 5th and 6th accounted for 2% of the frequency distribution (see Table 30).

Table 35

Least Selected Content:NLD

| Content | Frequency |
|---|---|
| A.B.C's Chart | 1 |
| Airplane | 1 |
| Apple | 1 |
| Button | 1 |
| Baking Ingredients | 1 |
| Bowl | 1 |
| Bench | 1 |
| Bell | 1 |
| Curtains | 1 |
| Clay | 1 |
| Containers | 1 |
| Curb | 1 |
| Camera | 1 |
| Calendar | 3 |
| Crayons | 3 |
| Chimney | 1 |
| Dice | 1 |
| Doll | 1 |
| Electrical Outlet | 1 |
| Flowers | 4 |
| Fence | 2 |
| Frog | 1 |
| File Cabinet | 1 |
| Film Screen | 2 |
| Flagpole | 1 |
| Globe | 1 |
| Grass | 1 |
| Games | 2 |
| Hoop | 1 |
| Hockey Stick | 2 |
| Headphones | 1 |
| Lamps | 1 |
| Lights | 2 |
| Musical Notes | 2 |
| Microphone | 1 |
| Map | 1 |
| Numbers | 1 |
| Oven | 1 |
| Pole | 1 |
| Peers | 1 |
| Picture | 4 |
| Puppets | 1 |
| Projects | 1 |
| P.A. Box | 3 |
| Pencil Holder | 1 |
| Puck | 1 |
| Puzzle | 1 |
| Ruler | 3 |

| | |
|---|---|
| Rope | 1 |
| Roof | 2 |
| Stool | 2 |
| Shelves | 4 |
| Sculpture | 1 |
| Scissors | 3 |
| School Name | 2 |
| Sidewalk | 1 |
| Spoon | 1 |
| Signs | 1 |
| Screen | 1 |
| Stairs | 1 |
| Timetable | 4 |
| Tree | 1 |
| Toyhouse | 1 |
| Worksheets | 1 |
| Welcomemat | 1 |
| **Total** | 98 |
| **Total Number of Objects:** | 66 |

Dichotomous Dimension

As noted earlier (see Table 25), there was a demonstrated relationship between 19 of the dichotomous items and group, however, qualitative analysis revealed important qualitative information with regards to 35 additional items.

Four (4) items were considered qualitatively significant because they appeared to be reaching significance (see Table 36). In terms of self turned away from peers, more NLDs (17/48) seemed to represent themselves as turned away from their peers compared to LDs (9/48). In terms of pressure of lights, none of the LD subjects showed evidence of lights where as three (3/48) NLD subjects presented evidence of lights. In terms of integration, three LD subjects (3/48) showed evidence of poor integration compared to none of the NLDs showing evidence of poor integration. In terms of composition, more LDs showed evidence of simple composition (15/48) than did NLDs (7/48).

Thirty-one (37) other items were considered noteworthy because of one or the other following reasons: (a) very few subjects showed evidence of these items in their drawings or (b) very many subjects showed evidence of these items in their drawings (see Table 37). For example, only one out of 96 subjects in this study showed evidence of folded compartmentalization and 80 subjects out of 96 represented themselves with essential body parts missing. Further discussion of these items will be included in the next chapter.

Ten items within the dichotomous dimension did not have statistics computed. The ten items were teacher missing, self missing and peers missing, edging, evidence of withdrawl (self),sense of hopelessness (self),representation of depression (self), ballplaying (alone), muscular features and phallic symbols. The reason statistics were not computed was due to the fact that non of the subjects in either group failed to represent their teacher, themselves and at least one peer.

## Scoring Sheet Part 2

Qualitative information in relation to Scoring Sheet Part 2 will be presented in accordance with the order of items on the scoring sheet (see Appendix C) and the need for inclusion.

Table 36
Chi Square:Variables Close To Signifigance

| Variable | $x^2$ | Sig. at .05 |
|---|---|---|
| Self Turned Away from Peers | 3.375 | .0662 |
| Presence of Lights | 3.096 | .0784 |
| Poor Integration | 3.096 | .0784 |
| Simple Composition | 3.773 | .0521 |

### Pathology

Statistics were not computed for the pathology item due to the fact that none of the subjects represented pathology in their drawings.

### Positive Self Concept

Although there was no demonstrated relationship between positive self concept and group the results appeared to be reaching significance (see Table 38). According to the cross tabulations more NLDs were rated as showing positive self concept (33/48) than LDs (22/48) and more LDs (16/48) were rated as not showing positive self concept to NLDs (8/48).

### Visible Action Agrees With Verbal Description (VAVD)

Although there was no demonstrated relationship between VAVD and group further inspection of the results showed that even though the majority of subjects were rated as showing the ability to match the visual representation with the verbal description (94.8%) there was one subject within the LD group who was not able to do this and four other subjects for whom the raters could not rate with certainty (see Table

Table 37
Qualitatively Signifigant Variables

| Variable | Frequency | | | |
|---|---|---|---|---|
| | LD | | NLD | |
| | Prsnt | Nprst | Prsnt | Nprst |
| Folded Compartmentalization | 1 | 47 | 0 | 48 |
| Lining at the Bottom | 1 | 47 | 2 | 46 |
| Underlining Individual Fig. | 1 | 47 | 1 | 47 |
| Birds Eye View | 1 | 47 | 0 | 48 |
| Figure Rotated 45° | 5 | 43 | 1 | 47 |
| Lack of Interest | 2 | 46 | 0 | 48 |
| Empty Space | 0 | 48 | 1 | 47 |
| Water Present | 1 | 47 | 0 | 48 |
| Small Self Figure Drawn | 1 | 47 | 1 | 47 |
| Figures Dominating/Powerful | 0 | 48 | 1 | 47 |
| Missing Body Parts (Self) | 42 | 6 | 38 | 10 |
| Missing Body Parts (Teacher) | 45 | 3 | 40 | 8 |
| Missing Body Parts (Peers) | 43 | 5 | 41 | 7 |
| Tiny Feet | 2 | 48 | 2 | 48 |
| Cutting Activities | 1 | 47 | 3 | 45 |
| Presence of Weapons/Harmful Objects | 2 | 46 | 0 | 48 |
| Power Symbols | 1 | 47 | 0 | 48 |
| Exaggerated Size of Figure(s) | 2 | 46 | 0 | 48 |
| Transparent Figures | 0 | 48 | 1 | 47 |
| Figures Representing Sexuality | 1 | 47 | 0 | 48 |
| Breast Emphasis | 2 | 46 | 2 | 46 |
| Zipper Drawn | 2 | 46 | 0 | 48 |
| Belt Emphasized | 1 | 47 | 0 | 48 |
| Evasions | 2 | 46 | 1 | 47 |
| Akinesis | 1 | 47 | 0 | 48 |
| Exaggeration of Body Part | 1 | 47 | 2 | 46 |
| Extremity Cut off by Paper (Self) | 0 | 48 | 1 | 47 |
| Extremity Cut off by Paper (Teacher) | 0 | 48 | 1 | 47 |
| Extremity Cut off by Paper (Peers) | 0 | 48 | 1 | 47 |
| Animal/Monster Like Appearance | 0 | 48 | 1 | 47 |
| Mechanical Like Appearance | 1 | 47 | 0 | 48 |

39).

## Figure Distortion

As noted earlier, there was no demonstrated relationship between figure distortion and group. However, further analysis of the results showed that the majority of subjects from both groups did not draw themselves or other

**Table 38**
**Chi Square:Positive Self Concept**

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Yes | No | Uncertain | Row Total |
|---|---|---|---|---|
| LD | 22 | 16 | 10 | 48 |
| | 45.8 | 33.3 | 20.8 | 50.0 |
| | 40.0 | 66.7 | 58.8 | |
| | 22.9 | 16.7 | 10.4 | |
| NLD | 33 | 8 | 7 | 48 |
| | 68.8 | 16.7 | 14.6 | 50.0 |
| | 60.0 | 33.3 | 41.2 | |
| | 34.4 | 8.3 | 7.3 | |
| Col. Tot. | 55 | 24 | 17 | 96 |
| | 57.3 | 25.0 | 17.7 | 100.0 |

Significance .0673

figures such that without verbal description it would not be recognizable (97.9%). However, one subject within the LD group was rated as showing significant figure distortion and another subject from the same group could not be rated with certainty (see Table 40). All of the subjects within the NLD group were rated as showing no significant evidence of figure distortion.

## Activity of Child (Affect)

As noted earlier, there was no demonstrated relationship between activity of child (affect) and group, however the results appeared to be reaching significance (.0679) (see Table 41). The results showed that the majority

Table 39

Chi Square:VAVD

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Yes | No | Uncertain | Row Total |
|---|---|---|---|---|
| LD | 44 | 1 | 3 | 48 |
| | 91.7 | 2.1 | 6.3 | 50.0 |
| | 48.4 | 100.0 | 75.0 | |
| | 45.8 | 1.0 | 3.1 | |
| NLD | 47 | | 1 | 48 |
| | 97.7 | | 2.1 | 50.0 |
| | 51.6 | | 25.0 | |
| | 49.0 | | 1.0 | |
| Col. Tot. | 91 | 1 | 4 | 96 |
| | 94.8 | 1.0 | 4.2 | 100.0 |

Significance .3501

of subjects from both groups were rated as showing evidence of positive affect. However, the results showed that more LDs were rated as showing negative affect (9/48) compared to NLDs (2/48) and within the LD group their were 5 subjects for whom the raters could not rate with certainty compared to two (2) subjects within the NLD group.

## Activity of Teacher (Affect)

The results showed no demonstrated between activity of teacher and group, however, the results appeared to be reaching significance (.0783)(see Table 42). The results showed that the majority of subjects from both groups were rated a representing their teacher in a positive manner

Table 40

**Chi Square:Figure Distortion**

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Yes | No | Uncertain | Row Total |
|---|---|---|---|---|
| LD | 1 | 46 | 1 | 48 |
| | 2.1 | 95.5 | 2.1 | 50.0 |
| | 100.0 | 48.9 | 100.0 | |
| | 1.0 | 47.9 | 1 | |
| NLD | | 48 | | 48 |
| | | 100.0 | | 50.0 |
| | | 51.1 | | |
| | | 50.0 | | |
| Col. Tot. | 1 | 91 | 1 | 96 |
| | 1.0 | 97.9 | 1.0 | 100.0 |

Significance .3601

(74.0%). However, more NLDs (41/48) than LDs (30/48) represented their teacher in a positive way. Where as 85.4% of the NLDs showed their teachers in a positive way with the remaining 4.6% being relatively equally dispersed across the other three categories (neutral, negative and uncertain) 62.5% of the LDs represented their teachers as positive, with more LDs compared to NLDs representing their teachers in a neutral, negative and uncertain manner.

**Problems Indicated In Student Teacher Relationship (PSTR)**

The results showed no relationship between PSTR and group, however the results appeared to be reaching significance (.0524) (see Table 43). The results showed that

### Table 41
### Chi Square:Activity of Child (Affect)

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Positive | Neutral | Negative | Uncertain | Row Total |
|---|---|---|---|---|---|
| LD | 31<br>64.6<br>43.1<br>32.3 | 3<br>6.3<br>50.0<br>3.1 | 9<br>18.8<br>81.8<br>9.4 | 5<br>10.4<br>71.4<br>5.2 | 48<br>50.0 |
| NLD | 41<br>85.4<br>56.9<br>42.7 | 3<br>6.3<br>50.0<br>3.1 | 2<br>4.2<br>18.2<br>2.1 | 2<br>4.2<br>28.6<br>2.1 | 48<br>50.0 |
| Col. Tot. | 72<br>75.0 | 6<br>6.3 | 11<br>11.5 | 7<br>7.3 | 96<br>100.0 |

Significance .0679

the majority of subjects from both groups (LDs and NLDs) were rated as not showing any evidence of problems in student teacher relationship (84.4%). However, 7.3% of the subjects could not be rated with certainty (LDs 2/48 and NLDs 5/48) and 14.6% of the LD group (7/48) were rated as showing evidence of problems with student/teacher relationship compared to 2.1% of the NLD group (1/48).

## Activity of Self and Peers (Affect)

Although there was no demonstrated relationship between activity of self and peers the results showed (see Table 44) that the majority of subjects (LDs and NLDs) were rated as being engaged in positive activities and that more NLDs were rated this way (40/48) than LDs (32/40). Within the LD group

**Table 42**

**Chi Square:Activity of Teacher (Affect)**

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Positive | Neutral | Negative | Uncertain | Row Total |
|---|---|---|---|---|---|
| LD | 30 | 10 | 4 | 4 | 48 |
| | 62.5 | 20.8 | 8.3 | 8.3 | 50.0 |
| | 42.3 | 76.9 | 66.7 | 66.7 | |
| | 31.3 | 10.4 | 4.2 | 4.2 | |
| NLD | 41 | 3 | 2 | 2 | |
| | 85.4 | 6.3 | 4.2 | 4.2 | |
| | 57.7 | 23.1 | 33.3 | 33.3 | |
| | 42.7 | 3.1 | 2.1 | 2.1 | |
| Col. Tot. | 71 | 13 | 6 | 6 | 96 |
| | 74.0 | 13.5 | 6.3 | 6.3 | 100.0 |

Significance .0783

14.6% of the subjects were rated as being in negative activities compared to 2.1% of the subjects within the NLD group. Additionally, 10.4% of all the subjects (6/48 of LDs and 4/48 of NLDs) could not be rated with certainty.

## Problems In Peer Relationships (PPR)

There was no demonstrated relationship between PPR and group, however subsequent analysis showed that even though the majority of subjects were rated as showing no evidence of problems in their peer relationships (92.7%) there were three subjects within the LD group (3/48) that were rated as showing problems in their peer relationships and no subject within the NLD group rated as showing problems in their peer

Table 43

Chi Square:PSTR

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Yes | No | Uncertain | Row Total |
|---|---|---|---|---|
| LD | 7<br>14.6<br>87.5<br>7.3 | 39<br>81.3<br>48.1<br>40.6 | 2<br>4.2<br>28.6<br>2.1 | 48<br>50.0 |
| NLD | 1<br>2.1<br>12.5<br>1.0 | 42<br>87.5<br>51.9<br>43.8 | 5<br>10.4<br>71.4<br>5.2 | |
| Col. Tot. | 8<br>8.3 | 81<br>84.4 | 7<br>7.3 | 96<br>100.0 |

Significance .0524

relationships (see Table 45). Additionally, 4.2% of all the subjects (LDs 3/48, NLDs 1/48) could not be rated with certainty.

## Isolation/Rejection

There was no demonstrated relationship between isolation and group. However, the results showed that the majority of subjects from both groups were rated as showing no evidence of isolation (45.8%). Additionally, next to no evidence, more subjects from both groups were rated as showing maximum evidence (29.2%) compared to minimal evidence (15.6%) and moderate evidence (9.4%) respectively. According to the results more LDs were rated as showing

Table 44
Activity of Self/Peers(Affect)

PSTR

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Positive | Neutral | Negative | Uncertain | Row Total |
|---|---|---|---|---|---|
| LD | 32<br>66.7<br>44.4<br>33.3 | 3<br>6.3<br>50.0<br>3.1 | 7<br>14.6<br>87.5<br>7.3 | 6<br>12.5<br>60.0<br>6.3 | 48<br>50.0 |
| NLD | 40<br>83.3<br>55.6<br>41.7 | 3<br>6.3<br>50.0<br>3.1 | 1<br>2.1<br>12.5<br>1.0 | 4<br>8.3<br>40.0<br>4.2 | 48<br>50.0 |
| Col. Tot. | 72<br>75.0 | 6<br>6.3 | 8<br>8.3 | 10<br>10.4 | 96<br>100.0 |

Significance .1223

minimal (11/48) and maximum (16/48) evidence of isolation compared to NLDs (minimal 4/48 and maximum 12/48). In terms of the moderate category 6.3% of the LD subjects were rated as showing moderate evidence of isolation compared to 12.5% of the NLD group (see Table 46).

## Anxiety/Conflict

There was no demonstrated relationship between anxiety/conflict and group. However, subsequent analysis of the rating scale showed that the majority of subjects from both groups were rated as showing maximum evidence of anxiety (65.6%). A relatively equal percentage of subjects from both groups were rated as showing minimal and moderate

Table 45
Chi Square:Problems in Peer Relationship

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Yes | No | Uncertain | Row Total |
|---|---|---|---|---|
| LD | 3<br>6.3<br>100.0<br>3.1 | 42<br>87.5<br>47.2<br>43.8 | 3<br>6.3<br>75.0<br>3.1 | 48<br>50.0 |
| NLD | | 47<br>97.9<br>52.8<br>49.0 | 1<br>2.1<br>25.0<br>1.0 | 48<br>50.0 |
| Col. Tot. | 3<br>3.1 | 89<br>92.7 | 4<br>4.2 | 96<br>100.0 |

Significance .1176

evidence (16.7% and 15.6% respectively) where as only 2 subjects (LDs 1/48, NLDs 1/48) were rated as showing no evidence of anxiety. Additionally, more NLDs were rated as showing minimal evidence of anxiety (12/48) compared to LDs (4/48) and more LDs (10/48) were rated as showing moderate evidence of anxiety compared to NLDs (5/48) (see Table 47).

## Aggression

The results showed no demonstrated relationship between Agression and group. Subsequent qualitative analysis showed that the majority of subjects from both groups (54.2%) were rated as showing no evidence of aggression. However, within the LD group 56.2% of the subjects were rated as showing

Table 46
Chi Square: Isolation/Rejection

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 18 | 11 | 3 | 16 | 48 |
| | 37.5 | 22.9 | 6.3 | 33.3 | 50.0 |
| | 40.9 | 73.3 | 33.3 | 57.1 | |
| | 18.8 | 11.5 | 3.1 | 16.7 | |
| NLD | 26 | 4 | 6 | 12 | 48 |
| | 54.2 | 8.3 | 12.5 | 25.0 | 50.0 |
| | 59.1 | 26.7 | 66.7 | 42.9 | |
| | 27.1 | 4.2 | 6.3 | 12.5 | |
| Col. Tot. | 44 | 15 | 9 | 28 | 96 |
| | 45.8 | 15.6 | 9.4 | 29.2 | 100.0 |

Significance .0983

minimal, moderate or maximum evidence of aggression (see Table 48) compared to 35.4% of the subjects within the NLD group who were rated as showing minimal, moderate or maximum evidence of aggression.

**Dominance/Power**

There was no demonstrated relationship between dominance/power and group. However, subsequent qualitative analysis showed that the majority of subjects from both groups (93.8%) as well as an equal number of subjects in both groups (LDs 45/48, NLD 45/48) were rated as showing no evidence of dominance and/or power. None of the subjects

Table 47
Chi Square:Anxiety/Conflict

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 21 | 6 | 10 | 11 | 48 |
| | 43.8 | 12.5 | 20.8 | 22.9 | 50.0 |
| | 50.0 | 25.0 | 66.7 | 52.4 | |
| | 1.0 | 4.2 | 10.4 | 34.4 | |
| NLD | 1 | 12 | 5 | 30 | 48 |
| | 2.1 | 25.0 | 10.4 | 62.5 | 50.0 |
| | 50.0 | 75.0 | 33.3 | 47.6 | |
| | 1.0 | 12.5 | 5.2 | 31.3 | |
| Col. Tot. | 2 | 16 | 15 | 63 | 96 |
| | 2.1 | 16.7 | 15.6 | 65.6 | 100.0 |

Significance .1213

from both groups showed minimal evidence, one LD (1/48) subject showed moderate evidence of dominance/power, and 5 subjects (5.2%) from both groups (LDs 2/48, NLDs 3/48) were rated as showing maximum evidence of dominance and or power (see Table 49).

## Defensiveness

There was no demonstrated relationship between defensiveness and group. Subsequent qualitative analysis showed the majority of subjects from both groups were rated as showing no evidence of defensiveness (90.6%) and 9.4% of all subjects (LDs 6/48, NLDs 3/48) were rated as showing

Table 48

Chi Square:Aggression

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 21<br>43.8<br>40.4<br>21.9 | 6<br>12.5<br>75.0<br>6.3 | 10<br>20.8<br>52.6<br>10.4 | 11<br>22.9<br>64.7<br>11.5 | 48<br>50.0 |
| NLD | 31<br>64.6<br>50.6<br>32.3 | 2<br>4.2<br>25.0<br>2.1 | 9<br>18.8<br>47.4<br>9.4 | 6<br>12.5<br>35.3<br>6.3 | 48<br>50.0 |
| Col. Tot. | 52<br>54.2 | 8<br>8.3 | 19<br>19.8 | 17<br>17.7 | 96<br>100.0 |

Significance .1419

maximum evidence of defensiveness (see Table 50). None of the Subjects from both groups were rated as showing minimal or moderate evidence of defensiveness.

## Support/Acceptance

There was no demonstrated relationship between support and/or acceptance and group. However, subsequent qualitative analysis showed that the majority of subjects from both groups were rated as showing moderate (45.8%) and maximum (45.8%) evidence of support/acceptance. There was 7.3% of the population (LDs 1/48, NLDs 6/48) rated as showing minimal evidence and one (1/48) subject within the LD group

Table 49

Chi Square:Dominance/Power

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 45<br>93.8<br>50.0<br>46.9 | | 1<br>2.1<br>100.0<br>1.0 | 2<br>4.2<br>40.0<br>2.1 | 48<br>50.0 |
| NLD | 45<br>93.8<br>50.0<br>46.9 | | | 3<br>6.3<br>60.0<br>3.1 | 48<br>50.0 |
| Col. Tot. | 90<br>93.8 | | 1<br>1.0 | 5<br>5.2 | 96<br>100.0 |

Significance .5488

who was rated as showing no evidence of support and/or acceptance. Hence, by in large, almost all of the subjects (99%) were rated as showing some evidence of support/acceptance (see Table 51).

**Insecurity/Dependence**

There was no demonstrated relationship between insecurity and/or dependence and group, however, the results appeared to be reaching significance (.0733)(see Table 52). According to the results the majority of subjects from both groups were rated as showing moderate evidence of insecurity and/or dependence (53.1%). More LDs (15/48) than NLDs (6/48)

Table 50

Chi Square:Defensiveness

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 1<br>2.1<br>48.3<br>43.8 | 1<br>2.1 | 23 | 23<br>12.5<br>66.3<br>6.3 | 48<br>50.0 |
| NLD | 45<br>93.8<br>51.7<br>46.9 | | | 3<br>6.3<br>33.3<br>3.1 | 48<br>50.0 |
| Col. Tot. | 87<br>90.6 | | | 9<br>9.4 | 96<br>100.0 |

Significance .2935

were rated as showing no evidence of insecurity/dependence, and a greater percentage of NLD subjects (87.5%) than LD subjects (68.7%) were rated as showing minimal, moderate and maximum evidence of insecurity and/or dependence.

## Body Concerns

There was no demonstrated relationship between body concerns and group. The results showed that a relatively equal number of subjects in both groups were rated as showing minimal (LD 24/48, NLD 23/48), moderate (LDs 5/48, NLDs 3/48) and maximum (LDs 19/48, NLDs 18/48) evidence of body concerns. However, where as four (4) subjects within

Table 51

**Chi Square: Support/Acceptance**

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 1<br>2.1<br>100.0<br>1.0 | 1<br>2.1<br>14.3<br>1.0 | 23<br>47.9<br>52.3<br>24.0 | 23<br>47.9<br>52.3<br>24.0 | 48<br>50.0 |
| NLD | | 6<br>12.5<br>85.7<br>6.3 | 21<br>43.8<br>47.7<br>21.9 | 21<br>43.8<br>47.7<br>21.9 | 48<br>50.0 |
| Col. Tot. | 1<br>1.0 | 7<br>7.3 | 44<br>45.8 | 44<br>45.8 | 96<br>100.0 |

Significance .1908

the NLD group were rated as showing no evidence of body concerns every subject within the LD group were rated as showing some evidence of body concerns.

## Negative Self Concept

There was no demonstrated relationship between negative self concept and group. The results showed that a relatively equal number of subjects within both groups were rated as showing no evidence (LDs 13/48, NLDs 11/48), moderate evidence (LDs 28/48, NLDs 29/48) and maximum evidence (LDs 7/48, NLDs 8/48) of negative self concept. Additionally, the results showed that no subject from either group was rated

Table 52
Chi Square: Insecurity/Dependence

Frequency
Row Pct.
Col. Pct.
Tot. Pct.

| Group | Not Evident (0) | Minimal (1) | Moderate (2) | Maximum (3) | Row Total |
|---|---|---|---|---|---|
| LD | 15 | 8 | 21 | 4 | 48 |
|  | 31.3 | 16.7 | 43.8 | 8.3 | 50.0 |
|  | 71.4 | 61.5 | 41.2 | 36.4 |  |
|  | 15.6 | 8.3 | 21.9 | 4.2 |  |
| NLD | 6 | 5 | 30 | 7 | 48 |
|  | 12.5 | 10.4 | 62.5 | 14.6 | 50.0 |
|  | 28.6 | 38.5 | 58.8 | 63.6 |  |
|  | 6.3 | 5.2 | 31.3 | 7.3 |  |
| Col. Tot. | 21 | 13 | 51 | 11 | 96 |
|  | 21.9 | 13.5 | 53.1 | 11.5 | 100.0 |

Significance .0733

as showing minimal evidence of negative self concept.

## Informal Rater Questionaire

At the conclusion of the rating assignment all of the raters were asked to complete an informal rater questionaire (see Appendix F). The results of this questionaire showed that with respect to the questions: (1) all of the raters thought that the training sessions and rating assignments were very worthwhile in terms of a general learning experience, (2) all of the raters thought that the directions provided during the training sessions were very clear, (3) all of the raters thought that the presentation and instructions related to the scoring guide, reference guide and scoring sheets were very organized, (4) all of the raters spent between 20 and 25 hours rating the (48) drawings using Scoring Sheet Part 1, (5) all of the raters spent between 10 and 15 hours rating the (48) drawings using Scoring Sheet Part 2, (6) all of the raters thought that rating the drawings using Scoring Sheet Part 1 helped them rate the drawings using Scoring Sheet Part 2; the reasons listed were (a) "it helped familiarize myself with individual signs in drawings", (b) "provided a good basis for looking at drawings more generally", (c) "had a better feeling about the drawings after a close inspection of what and how they drew", and (d) "made me more alert", (7) all of the raters found the reference and scoring guides very useful (8) all of the raters had difficulty with some of the items/ categories; the items/categories listed as well as reasons were (a) self turned away from the teacher (unclear about how to rate some of the represented positions in relation to this item, for ex. side by side, back to back, back to side, back to front, etc.), (b) self turned away from peers (unclear whether the items refers to all or some of the peers), (c) everyone doing different activity (unclear about whether doing different academic subjects constituted different activities), (d) exaggerated size of body parts (unclear about what was operationally defined as exaggerated), (e) self close to peers or teacher (unclear about what differentiated close from not close), (f) numerous erasures on body (unclear about how many constitutes numerous), (g) barriers (unclear about what count as being a barrier), (h) no face (unclear about whether a person who was facing into the drawing should be credited as having a face, (i) simple composition (too subjective), (j) impulsivity (not clear), (k) body concerns, and insecurity (not clear).

In terms of further comments the raters stated the following: (a) "overall, I found scoring the drawings to be relatively simple and interesting, however, a long task. I feel the experience was a useful one for me and made me much more aware of things that I have since read about concerning drawings and their interpretations, particularly, how common some styles and symbols are", (b) "generally, 'neat stuff', you have made a convert out of me. I think I want to find out more about projective drawings after this experience, thanks for the opportunity of participating", (c) " I think, I can now appreciate how something might be manifested in more than one way, for example, an anxious person might not only cross hatch or erase a lot but might also (or instead of) use top lines as well as other things which can also be linked to the degree of anxiety as well," (d) "after rating so many drawings I think I am capable of picking out issues without the use of the rating scales, scoring and reference guides, however, I believe I need a lot more knowledge, theory and experience before I become comfortable with projective drawings", (e) "eventually the scoring guides, and reference guides helped me be consistent from one drawing to the next, at times, I felt unsure about some of my evaluations, (f) "the rating experience gave me a very good idea about all the content and related information within drawings". The rating exercise was very valuable because it enabled me to focus on particular components of the drawings. Without using the scoring sheets and guides I would have over looked many meaningful details. However, Scoring Sheet Part 1 was very tedious".

## F. Summary

Overall, the results from the qualitative analysis revealed several major findings such as (1) although the majority of null hypotheses were accepted subsequent qualitative analysis showed unique patterns of interaction both within and between groups not evident from quantitative analysis, (2) although group trends were noted in the quantitative analysis further inspection identified rare occurance in relation to facial expression, figure direction, figure sequencing, and figure representations that could reflect individual personality variables, (3) contrary to the opinion of Burns and Kaufman (1972) that barriers are atypical in a normal population, desks and chairs as barriers as well as no barriers appears to be common place in KSDs, hence, barriers other than desks and chairs could be considered atypical. Furthermore, qualitative results suggested that the type and frequency of barriers appears related to the type of activity and content children display in their drawings, (4) content in KFD is generally associated with the home environment (Sims, 1979) and the results of this study suggest that content in school pictures tend to be associated with the school environment. Additionally, the content represented in drawings appears to be a function of activity, placement and behavior of the child. For example, LDs tended to represent themselves in non academic behavior and outside the classroom where as NLDs tended to represent themselves in academic related activies and within the classroom. Both of these groups presented content that reflected their behaviour and placement in that LDs showed evidence of for example swings, hills, suns, clouds and other outside objects and NLDs tended to show more content related to inside the school environment such as bullentin boards, computers and mathwork (5) although the majority of children demonstrated the ability to represent themselves and others in school pictures that were both clearly described and drawn some children showed significant difficulty on these tasks which could be indicative of the inner dynamics of the individual, (6) eventhough only 19 signs noted in the KFD literature (Kaufman and Burns, 1972) demonstrated group differences an additional 37 signs reported to be significant in family and human figure drawings were considered to be clinically meaningful for KSDs as well, due to their rare or large occurence in the total population of this study, (7) although not statistically significant more LDs showed maximum evidence of isolation/rejection, moderate evidence of anxiety, and more generalized evidence of aggression, compared to NLDs which is consistent with both drawing research (Raskin and Bloom, 1979) and general research (Lerner, 1985) with learning disabled children and (8) raters considered the rating exercise very worthwhile and the use of the instruments to be very effective in terms of rating consistency which was reflected by the inter rater reliability results. Furthermore, the raters identified all the items which proved to be most difficult to judge according to the reliability estimates which showed to be height and distance, self turned away from peers, erasures, everyone doing related activities, simple composition, drawing suggests positive self concept, drawing suggests negative self concept, emphasis on structure, drawer is likeable and body concerns. Additionally, their reasons accounting for the difficulty corresponded with the assumptions that those items tended to be too ambiguous for reliable and accurate judgement.

# V. Discussion

The last chapter presented the results of a test of 42 hypotheses and a qualitative investigation of the relationship between group as well as individual and the variables associated with both scoring sheets. This chapter first collectively discusses the quantitative and qualitative results with respect to the variables on both scoring sheets. This is followed by a discussion of the results with regard to the major questions and purpose of this study. Finally, comments in relation to implications of this study paticularly in terms of future use and research of the KSD are presented.

## A. Discussion of Variables

For the purpose of this section the variables from both scoring sheets will be collapsed into the following aspects: activity within the drawings, placement of self, figure portraiture, drawing integrity, content, individual signs, and psycological constructs. In terms of the variables listed on scoring sheets part 1 and 2 (see Appendix B & C) activity within the drawing pertains to the following variables: activity level of figures, activity between individual figures, activity of child (affect), activity of child in relation to peers, activity of teacher, problems indicated in student/teacher relationship, activities of self/peers, problems indicated in peer relationship, self behaviour (desireable or undesireable) and self engagement (academic or non academic).

Placement of self pertains to the following variables: location of self, order of self, and self placement. In terms of figure portraiture the following variables are involved: facial expression, direction of figures, distance of self from major figures, height of major figures, and number of peers present. The drawing integrity aspect refers to : emphasis on structure, visible action agrees with verbal description, visible action and/or verbal description appears strange or unexpected and self or other figure distortion. The content aspect pertain to the list of content from the drawings and barriers between figures. Individual signs refers the items listed under the dichotomous dimension (see Appendix B) and the psychological constructs pertain to: drawing suggests pathology, positive self concept, dislikeability of drawer, depression, isolation/rejection, anxiety/conflict, aggression, sexual concerns, dominance/power, defensiveness, support/acceptance, impulsivity, school problems, insecurity, competition, body concerns and negative self concept.

## B. Activity Within The Drawings

Generally, the results showed that KSD productions are not static and that in many respects LDs differ from NLDs in their representation of individual and interactive activity.

First, in terms of self activity more LDs showed themselves engaged in non academic and undesireable forms of behavior compared to NLDs who were more often rated as portraying themselves engaged in academic and disireable form of behavior. These results are consistent with the results reported by Prout and Celmar (1984) who found in their study that low achieving grade five students tended to portray themselves in non academic and/or undesireable activities with the opposite tendency for high achieving students. Second, in terms of quality of self activity or affective aspects, the results showed that even though the majority of subjects from both groups showed evidence of positive affect and no statistical relationship was found between affect and group, more LDs were rated as showing negative affect compared to NLDs. In terms of specific activities, the majority of LDs represented themselves as either inactive/passive or playing games where as NLDs more often portrayed themselves as active and were more involved with academic endeavours such as working on the computer. Additionally, more LDs showed themselves being disruptive, for example, fighting or arguing than NLDs.

With respect to teacher activity, NLDs portrayed their teachers as teaching more often than LDs who more often represented their teachers as playing or standing, sitting, walking. Generally, the majority of all subjects were rated as showing a positive quality of teacher activity (75%) however, where as the majority of NLDs portrayed their teacher in a positive manner, the majority of LDs represented their teachers in a neutral, negative or uncertain manner.

In terms of peer activity, the most common form of activity represented by both groups was playing, however, where as the majority of NLDs represented their peers as doing academic activities (for example computer work, math work) next to playing, the majority of LDs represented their peers doing non academic activities (for example drawing, colouring and swinging) next to playing. Additionally, where as some of the LDs showed their peers hitting, fighting, arguing, screaming or yelling none of NLDs depicted their peers in such a manner.

In relation to activities between individual figures and associated interactions the results revealed many statistical and clinical relationships. First, significantly more LDs represented their activities as being different from their peers compared to NLDs. Second, although the majority of subjects from both groups represented student/teacher and self/peer interaction as showing no evidence of problems, 14.6% of the LD group compared to 2.1% of the NLD group showed evidence of problems in student/teacher relationship, more subjects in the LD group were involved in negative activities with their peers (14.6%) compared to NLDs (2.1%), and where as none of the subjects within the NLD group represented problems with their peers. Three subjects within the LD group did show problems in relating to their peers. Third, in terms of specific activities between individual figures: (1) significantly more NLDs represented their interactions with teachers as being a teaching/learning relationship than LDs, (2) the most common representation from both groups was no activity and, (3) the majority of LDs represented their interaction in the form of talking, throwing objects and arguing with each other where as NLDs showed no evidence of arguing or throwing objects within the child/teacher relationship. In terms of self/peer activity, although no significant statistical relationship was found with group; no activity was most frequently represented by both, and where as the most common form of interaction in the LD group was playing and fighting or arguing, the most common form of interaction within the NLD group was playing and or doing academic work.

The forementioned results reveal differences between the way LDs represent self activity and interactions with others and the way NLDs represent self and interaction activity in drawings. Within the last few years there has been a widespread belief that learning disabled children may experience interpersonal difficulties (Lerner, 1981, Wiig & Semel, 1980) particularly in their interactions with teachers and peers. Some researchers suggest that LDs are inactive/passive learners (Torgessen, 1976) who conform less to the expectation of others (Dayleys et al. 1976), and avoid academic involvement due to a fear of failure (Gever, 1970). Other researchers simply report that the way LDs interact with significant others and the way others interact with them is different from normal children (Bryan & Bryan, 1978). The results from this study seem consistent with these views and suggest that LD children may reveal these aspects in their drawings, however, these indications need to be validated.

## C. Self Placement

In terms of location of self, the majority of subjects from both groups (61.5%) drew themselves closer to their peers than their teachers (27.1%) with very few from either group showing themselves as being isolated from other major figures. Although there was no demonstrated relationship between order of self and group the results showed that the majority of subjects drew themselves either first or second (79.2%) and only two subjects (LDs) drew themselves 5th or 6th. The most significant finding in terms of the self placement aspect was that more LDs were rated as showing themselves in activities outside the classroom (for example, on the schoolyard) compared to NLDs who were rated as more often showing themselves engaged in activities within the classroom. Firstly, these results suggest, that representing oneself as being isolated from a group in a KSD may be a rare occurence which would be consistent with research related to the KFD (Burns & Kaufman, 1971; Dileo, 1976). Secondly, that the order in which one draws oneself may be related to the instructions which creates a mind-set to draw one self first ("Draw yourself, teacher and a friend or two..."). Thirdly, that if drawing oneself as first or second is common place, drawing oneself later or last may indicate significant meaning in the individual case such as in the situation within this study where two subjects (LDs) drew themselves much later with respect to order of subjects drawn. Fourthly, that LDs may favour non academic activities compared to NLDs due to lower levels of academic competence (Smith, 1984) and self concept (Boersma & Chapman, 1974) is indicated, however as yet, unvalidated.

## D. Figure Portraiture

Although there was no demonstrated relationship between facial expression of major figures and group subsequent qualitative analysis showed that the majority subjects represented themselves and others in either a very friendly or friendly manner. However, two subjects (LDs) represented themselves in an unfriendly manner, one subject (NLD) represented their teacher in an unfriendly manner and one subject (LD) represented peer #1 in an unfriendly manner. These results suggest that it might be expected for children to draw significant others with friendly facial expressions. Hence, representations of unfriendly expressions may be indicative of conflict due to their rare occurence.

In terms of direction of figures the results showed a significant relationship between direction of self and peer

1 and group as well as qualitative significance with respect to teacher direction.

The results showed that significantly more LDs represented themselves facing out of the drawing than NLDs and that significantly more NLDs showed themselves facing away from major figures. Additionally, more LDs represented peer #1 facing out of the drawing than NLDs. Further analysis showed that although no relationship between teacher direction and group was demonstrated the majority of subjects represented their teachers facing out of the drawing and facing major figures (90.7%) compared to facing away from major figures and facing in to the drawing (9.3%).

Some of these results are consistent with findings from O'Brian ~~and~~ Pattons (1974) study with the KFD. O'Brian and Patton (1974) found that the child who drew the self figure facing away from major figures or with the back turned toward the viewer had a higher self concept than the child who drew the self figure facing either of the other figures or out at the viewer. Although cross validation studies need to be conducted, the results from the present study are consistent with O'Brian and Pattons' results and suggest that the direction of self figure may indicate level of self concept. Hence, LDs may be representing lower self concept than NLDs according to the results of this study.

In terms of interfigure distance and height there was no relationship between interfigure distance and group, however, there was a relationship between height of figures and group. The heights of self, teacher and peer #1 were all significantly smaller in the LDs drawings compared to the heights of these figures in the NLDs drawings.

The findings in terms of height is consistent with Prout and Celmars' (1984) study with the KSD which reported that low achieving students drew smaller teachers and peers. Although the clinical significance of height is debated by researchers (Swenson, 1966); Hammer (1958) suggests that size is related to self esteem and energy level, with high energy and self esteem subjects drawing larger figures and low self esteem subjects drawing smaller figures. Additionally, Koppitz (1966) found that shy, insecure children drew smaller figures. Hence, although the results of this study need to be validated, they suggest the possibility that LDs might be reflecting some of their characteristics such as low energy and self esteem (Lerner 1976) through their comparatively smaller drawn figures.

The lack of relationship between interfigure distance and group might mean that (1) children generally do not represent feelings of isolation though the representation of distance between figures, (2) that social schematic theory (Kuethe, 1966) is not reflected through the interfigure distance variable or (3) that it is represented, however rarely, and because analysis of this feature did not take into account individual examples of extreme distance, perhaps a few children demonstrated emotional separateness through the interfigure distance variable.

In terms of number of peers present, no relationship was found between number of peers and group, however subsequent inspection of the results showed that the majority of subjects (92.5%) drew at least three peers. Hence, there does not appear to be any difference between the groups in regards to number of peers presented, however, the results suggest that if a drawing does not contain any peers, it could be considered a rare occurence based on the results of this study and therefore be clinically significant.

## E. Drawing Integrity

In terms of structure, more subjects showed no evidence of structure (80.2%) compared to the percentage of the subjects showing evidence of structure (18.8%). Significantly more NLDs showed evidence of structure compared to LDs. These results suggest that when children are given a KSD assignment they are more likely to concentrate on figure activity than on drawing content. However, the results also suggest that NLDs have more of a tendency to focus on content over figure related representations than LDs.

In terms of visible action agreeing with verbal description and the appearance of strange or unexpected drawing features the majority of subjects showed an ability to match their visual representation with verbal description (94.8%) as well as a tendency to show no evidence of strangeness in their drawings (95.8%). However, one subject (LD) was rated as not relating visual with verbal and significantly more LDs produced drawings that were rated as strange or unexpected compared to NLDs.

In terms of figure distortion, there was no relationship between figure distortion and group. The majority of subjects (97.9%) represented their figures such that they were recognizeable, however, one subject (LD) was rated as showing significant figure distortion.

Generally, these results suggest that when asked to draw a school picture, the majority of students can draw recognizable figures and that their visual representation of themselves and others in school typically correspond with their written description. These results also suggest that if a student does distort his/her figure(s) and/or does not match visible presentation with verbal description then it might be considered a rare occurence and clinically meaningful.

According to Hammer (1958) distortion is indicative of severe emotional upheaval. Handler and Reyher (1965) found a majority of studies reporting significant relationships between distortion and other behavioral measures. According to Swensons (1966) review of human figure drawing research, there is much empirical support that indicates distorted drawings differentiate between severly disturbed and other kinds of subjects. Hence, further clinical investigation would seem appropriate for individuals who show figure distortion such as in the case of the one learning disabled student in this study.

## F. Content

The results of content analysis suggests that LDs and NLDs differ in their inclusion of content. Comparing content with action indicates that inclusion of content might be dependent on what action is chosen. The interpretation of content as symbols requires among other things the examination of intent of the child in terms of what significance it has to the child (Hammer, 1958).

In terms of specific content, the majority of subjects from both groups represented objects that could be thought as common place within a school environment such as desks, chairs, blackboards, pencils, paper and books. The results showed that more subjects in the NLD group than subjects in the LD group represented these common items where as more LDs represented items which could be considered less common such as sporting equipment, flowers, trees and .flagpoles. The type of content represented by the two groups seems to be related to the activity of self in the drawing. Hence, due to the results of this study that showed LDs' tendency to place themselves outside the school in their drawings and to be engaged in non academic behavior, their lesser tendency to represent objects not generally considered to be common or part of the classroom environment such as books and pencils might be expected.

As noted earlier, the significance of content needs to be verified by a greater understanding of the individual, however, some other comments can be made particularly in terms of the comparison of content between KFDs and KSDs. First, as might have been predicted, the content of KFDs generally represent items most commonly associated with the home environment where as content in KSD appears associated with the school environment. Second, some objects drawn by LDs and not by NLDs such as balls, clouds, suns and cars correspond to the symbols identified by Burns and Kaufman (1972) as signifying a particular field of force, anxiety, need for warmth or acceptance and power respectively. Third, that many of the items recorded on the least frequently selected content tables (see Tables 34,35) might be considered rare occurences and be worthy of further clinical investigation. Fourth, even though the majority subjects generally provided lots of content in their drawings they had a tendency to spend more time on figure activity as suggested by the results from the emphasis on structure variable.

Although the results showed no relationship between use of barriers and group,frequency analysis revealed that both the use and non use of barriers appears common place. The most common form of barrier used across all subjects was desks and chairs. The use of desks and chairs as a barrier between self and teacher occured in 31.3% of the drawings, between teachers and peers in 27% of the drawings and between self and peers in 34.4% of the drawings. However, the results showed that many subjects did not use barriers between self and teacher (39.6%), teacher and peers (44.8%) and self and peers (34.4%). Hence, contrary to Burns and Kaufmans' (1972) assertion that use of barriers in KFDs are atypical and therefore clinically meaningful, the results of this study suggest that barriers or the use of desks and chairs as barriers is typical and perhaps particular types of barriers such as swords, cars, hills, sidewalks etc (see Tables 31, 32, 33) are clinically meaningfull.

Additionally, the analysis of barriers in this study suggest that there is a very close relationship between the activity of self, placement of self and content in drawings and type if any barrier used in the KSD drawings. Thus, when examined together it appears that an appreciation of the overall quality of the drawing might enhance interpretation. Essentially, clinical judgement might be more effective when based upon a larger sample of drawing behaviour (Swenson, 1966).

## G. Individual Signs

The individual signs listed under the Dichotomous Dimension (see Appendix B) represent the majority of signs noted by experts and researchers in the field of projective drawings as representing clinical significance. For example, the list includes: (a) the 8 major KFD styles noted by Burns and Kaufman (1972) such as compartmentalization, encapsulation and lining at the bottom (see Appendix ), (b) individual characteristics of KFD figures as noted by Burns and Kaufman (1972) such as arm extensions, elevated figures, erasures and figures on the back of the page, (c) noteworthy signs reported by, for example, Machover (1949), Koppitz (1966), Bolander (1977), Kahill (1984), Swenson (1968), Buck (1974) such as space, figure placement, figure size and missing parts and (d) noteworthy signs reported by experts and researchers like Sarbough (1983), Wright (1982), and Reynolds (1978) such as rotation of figures, edge tendency, omitted figures, bizarre figures, figure details, transparencies, anchoring, interest, hopelessness, energy, activity, representation of achievement, quality of line etc.

This section will represent first a discussion, in terms of general findings, and then a discussion of results in relation to Burns 'and Kaufmans' style and individual characteristics of KFDs and Reynolds' quick scoring guide for the KFD.

The dichotomous dimension entailed 111 items for investigation. The results showed that 19 out of these 111 items demonstrated a relationship between the particular variable and group. Additionally, 37 other items revealed clinical significance due to some of them reaching significance, or because the items were either rarely evidenced or greatly evidenced. Hence, about one half of the items in the dichotomous dimension were considered either statistically or clinically noteworthy. Although the remaining items were not noted as being quantitively or qualitatively significant, the results suggest that perhaps those items in themselves should not be considered atypical in KSDs, for example, activity levels, no face, cross hatching, repetition of objects, elevated figures, placement of figure in relation to axis, covered up body parts, etc. (see Table 53). Out of 111 items, ten items were rated as never occuring. In terms of teacher missing, self missing and peers missing the reason for all students representing themselves, teachers and peers might be due to the instructions that emphasize the need for these figures to be represented as well as a description of what they are doing. These results suggest that if a KSD does not represent these figures it could be considered a rare occurrence and clinically meaningful. All other items were represented to some degree.

Burns and Kaufman (1972) suggest that their eight identified styles are rarely shown in normal KFD drawings and are produced by a much greater extent in drawings of emotionally and/or behaviourally disturbed individuals. The results of this study showed that there was no significant difference between the two groups, quantitatively or qualitatively in terms of their use of compartmentalization, or lining at the top. However, the results showed that differences did occur with the subjects' use of six out of the eight (6/8) styles.

## Table 53
## Part 1 Variables Showing No Significance

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Teacher Missing
Self Missing
Peers Missing
Compartmentalization
Edging
Lining at the Top
Self Turned away from Peers
Figures Rotated
Everyone Doing Different Activity
Passive Activity (Self, Teacher, Peers)
Evidence of Withdrawal (Self)
Lack of Interest (Self)
Lack of Energy (Self)
Sense of Helplessness (Self)
Representation of Depression (Self)
No Face (Self, Teacher, Peers)
Small Self Figure Drawn
Figures Drawn with Much Effort or Detail
Scribbling
Cross Hatching
Barriers Between Figures
X's present
Missing Essential Body Parts (Self, Teacher, Peers)
Erasures
Repetition of Objects
Exaggerated Size of Body Parts
Buttons Drawn
Light, Broken, Uneven Line Quality
Tiny Feet
Cutting Activities
Heavy Line Quality
Jagged or Sharp Fingers or ~~Toes~~
Ball Playing (Alone)
Evidence of Competition
A's present
Representation of Achievement
Elevated Figures
Muscular Features
Phallic Symbols
Breast Emphasis
Evasions
Everyone Doing Related Activities
Closeness of Figures (Teacher, Peers with Self)
Smiling Figures (Self, Teacher, Peers)
Overworked Lines
Perseveration
Figure (Self) in Relation to Axis
Numerous Erasures on Body
Exaggeration of Body Parts
Parts of Body Covered Up (Self, Teacher, Peers)

Hands Hidden (Self, Teacher, Peers)
Large Head Size

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First, the results showed that significantly more LDs represented encapsulation than NLDs. Second, that the other styles, namely, folded compartmentalization, lining at the bottom, underlining individual figures edging and Birds eye view occured very rarely. Out of all the subjects, one subject (LD) represented folded compartmentalization, one subject represented a birds eye view (LD), two subjects represented underlining of individual figures (LD and NLD) and three subjects (1 LD, 2 NLD) represented lining at the bottom. Hence, it appears that styles are rarely produced and could be as suggested by Burns and Kaufman (1972) clinically meaningful in Kinetic School Drawings.

Reynolds (1978) developed a quick scoring guide for clinicians who were knowledgeable and experienced with respect to projective family drawings. This scoring guide identifies approximately thirty items considered clinically significant from the projective drawing literature. The results from this study showed that 24 of these items could be considered relevant for scoring Kinetic school drawings. These items are barriers, height of figures, fields of force (balls), figure actions,proximity, position (placement) of figures, omitted figures, order of figures, bizarre features, overall impression (all of which were previously discussed in terms of activity, placement, figure portraiture, drawing integrity and content aspects of the drawings), arm extensions, shading, folding compartmentalization, underlining figures, encapsulation, edge tendency, figures back of page, line quality, details,rotation transparencies and anchoring (all of which showed qualitative or quantitative significance (see Tables 25 and 37).

Specifically, the results showed that significantly more LDs than NLDs represented encapsulation, light wavering lines, excessive shading, figures in a dangerous position, figures on the back of the page, hanging figures, anger or hostility between figures, teeth, hitting, yelling and screaming, ball playing, sporting equipment, figures lacking clothes, broken, uneven lines, lack of detail, and excessive shading of body area. Significantly more NLDs than LDs represented themselves turned away from the teacher, anchoring, edged placement of figures and arm extensions.

In terms of items reflecting qualitative importance due to results showing them reaching significance (see Table 36) more LDs demonstrated evidence of simple composition and poor integration than NLDs and more NLDs showed evidence of lights and of themselves turned away from peers than LDs. In terms of items showing potential clinical significance due to rare or large occurence (see Table 37): (a) lack of interest, presence of water, presence of weapons or harmful objects, power symbols, exaggerated size of figures, figures representing sexuality or seductiveness, zippers drawn, belt emphasized and akinesis were represented by a few subjects within the LD group and not by any of the subjects within the NLD group, (b) empty space, dominating or powerful figures and transparent figures were represented by a few of the subjects within the NLD group and not by any of the subjects within the LD group. (c) 3/96 subjects represented lining at the bottom (2 NLD, 1 LD), 2/96 subjects showed evidence of underlining individual figures (1 LD, 1 NLD), 6/96 subjects represented rotated figures (5 LDs, 1 NLD), 2/96 subjects drew small self figures (1 LD, 1 NLD), 4/96 subjects drew tiny feet (2 LDs, 2 NLDs), 4/96 subjects presented cutting activities, (1 LD, 3 NLD), 4/96 subjects emphasized breasts (2 LD, 2 NLD) and 3/96 subjects represented evasiveness (2 LDs, 1 NLD) and (d) the majority of subjects from both groups drew themselves and others with essential body parts missing.

In summary, the results related to the items listed under the Dichotomous dimension suggest that (1) differences exist between LDs and NLDs in terms of the number of subjects from both groups that represent these items in their drawing, (2) many of the items appear to correspond to the expectations of Burns and Kaufman (1972) and Reynolds (1978), (3) many of these items are just as prevalent and as potentially meaningful in KSDs as for KFDs, (4) due to the large number of subjects that drew figures missing essential body parts this study seems to confirm experts who suggest that due to the nature of school and family drawing tasks less emphasis will be placed on drawing human figures compared to tasks which require the drawer to concentrate only on reproducing a human figure (Dales, 1983) and (5) even though rare occurence and abundance of occurence may suggest clinical meaningfulness, the information needs to be collaborated with other drawing aspects as well as empirical support.

## H. Psychological Constructs

Generally, the results showed that out of 17 items considered to be representing psychological constructs, 7 of them demonstrated a significant relationship between variable and group with the remaining items providing meaningful qualitative information (see Tables 26 & 38- 52).

In terms of those variables that demonstrated a relationship with group; significantly more LDs than NLDs showed maximum evidence of depression, minimal evidence of sexual concerns, maximum evidence of impulsivity, maximum evidence of school problems, and moderate evidence of competition. Significantly more NLDs than LDs showed evidence of structure in their drawings, and more NLDs were rated as likeable compared to LDs.

In terms of qualitative information, none of the subjects were rated as representing pathology and although not statistically significant more NLDs were rated as showing positive self than LDs; more LDs were rated as showing minimal amd maximum evidence of isolation/rejection compared to NLDS; more LDs than NLDs were rated as showing moderate evidence of anxiety; more LDs were rated as showing some degree of aggression compared to NLDs, more LDs than NLDs showed no evidence of insecurity/depression, and where as none of the NLD subjects showed evidence of body concerns in their drawings, four subjects within the LD group were rated as showing some evidence of body concerns. These results suggest that given this studys' population of subjects; (1) finding a drawing that provides evidence of pathology is unlikely and (2) that two groups can be both quantitatively and qualitatively differentiated by varying degree of evidence (for example minmal, moderate, maximum levels of psychological constructs). Some of these results also seem consistent with findings from other drawing studies which have reported: (1) learning disabled children with motor delays show more evidence of isolation, rejection and body concerns in KFDs than children without those delays (Raskin and Pitcher Baker, 1977), and (2) pre- adolescent males with lower self-esteem tend to be rated more often as not likeable than pre-adolescent males who have higher levels of self-esteem from human figure drawings (Coopersmith, et al, 1976).

The results also appear to be consistent with general research regarding learning disabled children. The results from this study suggest that signs in drawings considered by experts and researchers to reflect conditions such as depression, impulsivity, likeability, isolation and rejection, anxiety, aggression, insecurity and school problems are represented more often and with a higher degree of clinical significance within the LD group than NLD group.

Research suggests that a characteristic common to learning disabled children is a failure to be held in high regard (Bruwninks, 1978; Bryan, 1974). Many LD children have low self esteem, are unsure about their worthyness and believe they have fewer friends then others (Boersma & Chapman, 1979, Bryan, 1982). Furthermore some researchers suggest that learning disabled children are at risk for social neglect and rejection (Bryan, 1982) leading to psychosocial problems such as anxiety and depression (Cowan, et al. 1973).

Many learning disabled children have difficulty establishing positive social relationships (Scranton, 1979) and have been reported to be more impulsive, have lower frustration tolerance (Alley et al, 1980) and are more anxious (Owen, et al, 1971) than non learning disabled children. These characteristics seem to influence other peoples opinions of them. For example, children and adults who are unfamiliar with LD childrens' diagnosis and personal histories are likely to view them as unlikeable (Bryan and Perlmuter, 1979).

This literature suggests that many learning disabled children are in a psychosocial situation that leads to disappointment, frustration, poor self concept and a feeling of helplessness and lack of control (Pearl et al, 1980. Lerner, 1981). When comparing this research with the present studys' findings it seems possible that many of their characteristics and emotions are being reflected and identified in their kinetic school drawings, however, the drawing signs considered to be representative of, for example, depression, impulsivity, likeability, isolation, anxiety, aggression and insecurity need to be validated.

In terms of those psychological constructs in the rating scale (see Appendix E) the results generally showed that for six out of the fourteen (6/14) constructs (see Table 54) the majority of subjects from the total population were rated as showing no eivdence of those constructs and for eight of the fourteen (8/14) constructs the majority of subjects showed some degree of evidence (minimal, moderate ormaximum) of those constructs (see Table 55). Specifically, more subjects showed some evidence of anxiety, support, insecurity, body concerns, negative self-concept, impulsivity, school problems and isolation compared to depression, competition, aggression, sexual concerns, dominance and defensiveness.

Additionally, the results showed a tendency for the rating scale to reflect a downward trend in regards to the relationship between indicator significance and frequency of occurence. Specifically, more drawings were rated as showing minimal to moderate degrees of the psychological construct or no evidence compared to moderate to maximum degrees of evidence. This trend seems to suggest that children can perhaps be expected to draw schoolpictures that contain indication of maladjustment, however, children might differ

Table 54

Psychological Constructs

| Feature | Percentage of Subjects Showing No Evidence |
|---|---|
| Depression | 76.0 |
| Competition | 78.0 |
| Aggression | 54.2 |
| Sexual Concerns | 62.5 |
| Dominance/Power | 93.8 |
| Defensiveness | 90.6 |
|  | No. of Subjects=96 |

from one another in terms of the type and significance of indication.

The only exceptions to this trend were with respect to anxiety where the majority of subjects were rated as showing maximum evidence (65.6%) and support/acceptance where the majority of subjects were rated as showing moderate to maximum evidence (91.6%). In terms of these exceptions, it appears that with regards to anxiety (see Rating Scale, Appendix E) it was common to find such things as excessive shading, cross hatching, barriers, X's, erasures, hanging figures, figures on the back of the page and figures in dangerous positions. In terms of support/acceptance it seems that it was common to find within the drawings such things as closeness of self to significant others, comments suggesting warmth and approval, everyone doing related activities and smiling figures.

In summary, the results associated with the psychological constructs suggests that (a) drawings reflecting pathology are very rare, (b) groups of students

Table 55

Psychological Constructs

| Feature | Percentage of Subjects Some Form of Evidence(Minimal, Moderate, or Maximum) |
|---|---|
| Anxiety/Conflict | 97.9 |
| Support/Acceptance | 99.0 |
| Insecurity/Dependence | 78.1 |
| Body Concerns | 95.9 |
| Negative Self-Concept | 75.0 |
| Impulsivity | 80.2 |
| School Problems | 85.4 |
| Isolation/Rejection | 54.2 |
| | No. of Subjects=96 |

(LDs & NLDs) can be differentiated according to the type and degree of drawing indicators, (c) that indicators reflecting various forms of psychological conditions tend to be present in most drawings however, they appear to be associated with more minimal to moderate levels of significance than moderate to maximum levels of significance, (d) learning disabled children seem to reflect some of their personality in school drawings, however, this needs to be validated, (e) some findings are consistent with other human figure drawing research, (f) many drawings show no evidence of the various psychological constructs particularly with respect to depression, competition, sexual concerns, dominance/power and defensiveness, and (g) many drawing show moderate to maximum evidence of support and acceptance as well as anxiety and conflict.

## I. Summary

Overall, the results from both the quantitative and qualitative analysis with regards to the major aspects of drawings indicates that: (1) drawings tended to be rated in this study as reflecting a more positive than negative quality, for example, interactions of self with others generally appeared to be non problematic, facial expressions showed a proclivity to be friendly, self figures were inclined to be rated as likeable and activities tended to be academic and desireable, (2) children seemed to draw school pictures that contained indicators of maladjustment, however, it appears that the drawings differed in terms of type and significance of indication, (3) children appear to be able to follow the instructions related to the KSD and complete the task without difficulty, however, some childrens' drawings contained distorted figures strange inclusions and contradictory messages (verbal description not agreeing with visual representation) which could suggest psychoemotional disturbance (Hammer, 1958), (4)some learning disabled children seemed to produce kinetic school drawings that both quantitatively and qualitatively differed from non learning disabled children: For example, (a) learning disabled children tended to represent themselves outside the school where as non learning disabled children tended to represent themselves within the school, (b) LDs tended to show themselves in non academic and undesirable forms of behavior where as NLDs tended to represent themselves in academic and desireable forms of behavior, (c) LDs tended to show themselves facing out of the drawing where NLDs tended to show themselves facing away from major figures, (d) LDs in comparison to NLDs tended to draw smaller human figures, (e) LDs tended to represent themselves as inactive and NLDs tended tended to represent themselves as active, (f) peers of LDs tended to be represented in non academic and undesireable forms of behavior outside the school and peers of NLDs tended to be represented in academic and desireable forms of behaviour within the school environment, (g) LDs tended to show more evidence of school problems, problems with teacher and peer interactions, impulsivity, isolation, anxiety, aggression, and body concerns compared to NLDs, and (h) eventhough all subjects appeared to spend more time representing figure activity than content, LDs tended to focus more on content than NLDs. (5) none of the subjects in this study failed to represent themselves, their teacher and at least one peer, hence, the occurence of missing figures in KSDs could be considered rare, (6) none of drawings were rated as showing pathology, therefore representation of pathology in KSDs could be considered a rare occurance, (7) the majority of subjects drew from one to three peers in their drawings, hence, no peers or more than three could be considered a rare occurence, (8) children tended to draw themselves close to peers followed by close to teacher , hence, evidence of isolation within school drawings could be considereda rare occurence, (9) the inclusion of content appeared to related to the type of activity represented and the placement of self in the drawing, (10) children tended to represent desks and chairs as barriers or not represent barriers, hence, barriers that are not desks or chairs could be considered rare. Furthermore, barriers appeared to be related to the type of content and activity represented in the drawing as well as self placement, (11) many of the indicators considered clinically significant within Kinetic family drawings (Burns and Kaufman, 1972) also appeared quantitatively and/or qualitatively significant within school drawings. For example, 6/8 styles were presented in this studys' population of drawings as were some individual figures (for example, arm extensions, hanging figures) and symbols (for example, clouds, suns, cars), (12) many of the indicators considered to be clinically meaningful with respect to KFDs and noted an Reynolds (1978) Quick Scoring Guide, appeared significant in terms of the KSD and (13) the majority of drawings contained human figures with essential parts of the body missing which seems to be consistent with the view that this can be expected due to the nature of the KSD task which places greater emphasis on showing human activity than human form.

## J. Discussion In Relation To Purpose and Major Questions of Study

The major purpose of this study was to initiate the process of making the KSD more applicable for clinicians and school psychologists. The questions related to this purpose were: (1) can a reference and scoring guide as well as scoring sheets be developed that allows for reliable judgements, (2) what do children typically draw when given a KSD task, (3) do the theoretical and clinical indicators developed and reported by researchers and experts show up in childrens' KSDs, (4) do different populations present different content in their drawings, (5) can two populations be differentiated according to theoretical and clinical indicators, and (6) can indicators of psychological constructs be categorized and differentiate groups of children.

### Question #1

Two scoring sheets, a reference guide and a scoring guide were developed for this study. The conclusion from the results of this study is that these instruments allowed raters to obtain satisfactory levels of agreement in terms of identifying and scoring graphic signs. This conclusion is based on the results from the inter-observer consistency estimates with agreement statistics and the informal rater questionaire.

In terms of inter judge reliabilities, the average percentage of agreement for the two sets of raters with respect to all items on Scoring Sheet Part 1 was between .7 and 1, except for 9 items which had lower estimates due to lack of precision of recording (for the continuous variables) and the ambiguous nature of the items. Hence, for Scoring Sheet Part 1, 124 out of 133 items showed judgement occuring of .7 and above between the two sets of raters. The average percentage of agreement for the two sets of raters with respect to all items on Scoring Sheet Part 2 was generally lower than the reliabilities for Part 1 due to the more global and less discrete nature of the items as well as the requirement for items on Part 2 to be rated on a 3 to 4 point scale rather than a two point scale most common on Part 1. However, 25 out of 30 items showed reliability estimates of .6 and above with the remaining five items revealing lower estimates due to their ambiguous nature.

Overall, satisfactory percentage of agreement between the raters was found for 149 items from scoring sheets part 1 and 2 which suggests that the raters were generally consistent in terms of identifying and scoring graphic signs and dimensions.

In terms of the informal raters' questionaire the results revealed that the raters had difficulty with the same items/categories which demonstrated low inter rater reliability estimates, as well as a few others. Specifically the raters found the following difficult to score: height of figures, distance between figures, self turned away from peers, erasures, everyone doing related activities, simple composition, positive self concept, negative self concept, emphasis on structure and likeability as well as, self turned away from teacher, everyone doing different activities, exaggerated size of body parts, position of self, barriers impulsivity, body concerns and insecurity. However, all the raters revealed that the use of both scoring sheets as well as the reference and scoring guide permitted them to rate each drawing consistently and that rating the drawings in terms of specific areas on scoring sheet Part 1 assisted them in rating the global dimensions on Scoring Sheet Part 2. Additionally, the raters thought that the directions and instructions were clear and organized and eventhough the scoring task proved to be long and tedious the exercise was worthwhile.

In summary, this study indicates high inter rater reliability for the KSD as long as the Scoring criteria are clearly defined and presented and the raters are adequately trained.

### Question #2

The conclusion from the results of this study in terms of drawing characteristics are: (1) desks and chairs as barriers as well as no barriers appear to be common place in KSDs, hence, barriers other than desks and chairs might be considered atypical, (2) the type and frequency of barriers appears to be related to the type of activity and content children display in their drawings, (3) generally, content in KSDs appear to be associated with the school environment, (4) the content in drawings seems to be a function of activity, placement and behaviour of the drawer, (5) figures tend to be drawn clearly and without distortion, (6) drawing productions tend to show motion or some type of activity, (7) children (LDs and NLDs) tend to portray themselves inside the school more often than outside school, (8) children tend to represent themselves and their peers engaged in academic and desireable behavior compared to non academic and undesireable behavior, and the activities of children tend to be more positive than negative, (9) teachers tend to be represented in a more positive than negative manner, (10) peer activities tend to be related to playing, (11) interactions between major figures tend to show no evidence of problems, (12) the most common form of interaction between figures is no activity, (13) children tend to draw themselves closer to their peers than their teachers, (14) very few children show themselves as being isolated from other major figures, (15) children tend to draw themselves either first or second in relation to other drawn figures, (16) children tend to represent themselves and others in a friendly manner, (17) children tend to represent themselves as either facing out of the drawing or facing major figures, (18) children tend to represent their teachers as either facing out of the drawing or major figures, (19) children tend to represent their peers as either facing out of the drawing or major figures, (20) the average distance between self and teacher for LDs and NLDs is 6.63 cms, (21) the average distance between self and peers for LDs and NLDs is self (LDs and NLDs) is 5.06 cms, (23) the average height of teacher (LDs and NLDs) is 6.19 cms, (24) the average height of peer #1 (LDs and NLDs) is 4.89 cms, (24) children tend to drawn themselves taller than their peers and draw their teacher taller than themselves, (25) children tend to draw from one to three peers in their drawings, (26) children tend to draw themselves, their teacher and at least one peer in their drawings, (27) children tend to spend more time drawing figures and figure activity than content, (28) childrens' drawings of themselves and others tend to correspond with their written descriptions, (29) children tend to show no evidence of strangeness in their drawings, (30) children seem to draw school pictures that contain indicators of maladjustment (according to for example Burns and Kaufman (1972), Diles (1983), Reynolds (1978), Klepsch & Logie, 1982), however it appears that drawings differ in terms of type and significance of indication and (31) representation of pathology in drawings appears to be very rare.

In summary, the results of this study suggest that when the drawings of learning disabled and non learning disabled children are examined together there appears to be many characteristics that typify what children will draw when given a KSD task. However, the typicality of these characteristics need to be confirmed through further research.

**Question #3**

The conclusion from the results of this study is that theoretical and clinical indicators developed and reported by researchers and experts are revealed in childrens' KSDs. Generally, many indicators considered meaningful within Kinetic Family Drawings by Burns and Kaufman (1972), Dileo (1983), and Reynolds (1978) were represented in the Kinetic School Drawings. Additionally, many of the indicators considered meaningful by Prout and Celmar (1984), Prout and Knoff (1985) and Sarbaugh (1983) with respect to school drawings were represented in the drawings of this study.

Specifically, actions between figures and individual activities considered meaningful by Burns' and Kaufman (1972), Sarbough (1983) and Knoff and Prout (1985) were evidenced in the KSDs' of this study such as competition between figures, conflict between figures, harmony between figures, non competitive interactions, figures in dangerous positions, academic and non academic activities, desireable and undesireable behaviour, hanging or falling figures, high activity levels, and low activity levels.

Figure characteristics considered meaningful by Burns and Kaufman (1972), Dileo (1983), Knoff and Prout (1985), Sarbough (1983) and Reynolds (1978) were evidenced in the

KSDs of this study as arm extensions, excessive shading, cut off body parts, presence of barriers, omission of body parts, and transparancies.

Global characteristics considered meaningful by Burns and Kaufman (1972), Kloff and Prout (1985), Dileo (1983) and Sarbough (1983) were evidenced in the KSDs of this study as number of figures drawn, height of figures, direction of figures, stick figures, bizarre figures, figure characteristics, and indicators of psychoemotional and social maladjustment.

Styles and/or expressive components considered meaning by the previously noted researchers and experts were evidenced in this studys' KSDs such as line quality, drawing detail, encapsulation, folded compartmentalization, birds' eye view, lining and underlining, anchowing, facial expressions, distortion and figure sequencing.

Symbols/content considered meaningful by the previously noted researchers and experts were evidenced in this studys' KSDs such as clocks, dangerous objects, flowers, electrical outlets, lights, ropes, cars, suns, clouds, and water themes.

In summary, many of the theoretical and clinical indicators considered to be significant in both KFDs and KSDs showed up in the drawings produced by the children of this study.

**Question #4**

The conclusion from the results of this study is that content represented in KSDs tends to be associated with the school environment and appears to be function of activity, placement and behaviour of the child. Additionally, the results of the content analysis indicates that learning disabled children differ from non learning disabled children in their inclusion of content.

Both groups of children showed a tendency to represent objects commonly found within the school environment such as desks, chairs, paper, books, pencils,. and blackboards, however, more non learning disabled children represented these forms of content than learning disabled children. The results indicated that learning disabled children tended to represent objects that were related to outside the classroom such as trees, flagpoles, clouds, suns, and cars, where as non learning disabled children presented content that was more related to inside the school environment.

The results showed that significantly more non learning disabled children included bulletin boards, blackboards, clocks, chairs, computers and chalk in their drawings than learning disabled children and that a significantly larger number of learning disabled children included balls and suns in their drawings than non learning disabled children.

As noted in the results section, where as some learning disabled children represented clouds, suns, cats, dirt (ground), water themes, garbage (waste baskets), kites, ladders, cars, spitballs, swords and shields none of the children within the non learning disabled group presented these forms of content in their drawings. According to Kaufman and Burns (1972) all of the above forms of content are considered to be symbols representing insecurity, need of warmth and acceptance, conflict, negative feelings, depressive tendencies, rivalry, need for escape and freedom, tension, power, and hostility, respectively. The only form of content represented by non learning disabled children and not by learning disabled children with respect to the symbols noted by Kaufman and Burns (1972) was lamps which are considered to be suggestive of a childs' need of warmth and security.

In summary, the results of this study showed that learning disabled and non learning disabled children differ with respect to the content of their drawings and that this difference may be symbolic of childrens' needs.

### Question #5

The conclusion from the results of this study is that the drawings of learning disabled children can be differentiated from the drawings of non learning disabled children by graphic indicators that are based on theoretical underpinnings as well as clinical and empirical evidence. First, this study demonstrated that there was a significant difference between the two groups with respect to self activity, peer activity, teacher activity, the type of activity between self and teacher, direction of self, direction of peer #1, content, height of self, height of teacher, height of peer #1, encapsulation, self turned away from teacher, light wavering lines, excessive shading, figures in dangerous position, figures on back of page, hanging figures, anchoring, edged placement of figures, arm extensions, hostility or anger between figures, teeth, visible action agreeing with verbal descriptio, ball playing of self with others, presence of sporting equipment, figures lacking cloths, broken, uneven lines, lack of detail, excessive shading of body area, emphasis on structure, likeability, strangeness in drawings, behavior of self, placement of self, activity of self (affect), academic bahavior, degree of depression, degree of sexual concerns, degree of impulsivity, degree of school problems, and degree of competition.

Second, this study demonstrated that the two groups of childrens' drawings differed qualitatively from one another with respect to the activity level of major figures, activity between individual figures, facial expression, direction of teacher, barriers between major figures, content, order of peers, self turned away from peers, presence of lights, poor integration, simple composition, positive self concept, figure distortion, activity of child (affect), activity of teacher (affect), problems in student teacher relationship, activity of self and peers (affect), problems in peer relationship, degree of isolation/rejection, degree of anxiety, degree of aggression, degree of support, degree of insecurity and degree of body concerns.

Additionally, the qualitative analysis revealed information considered relevant to the individual case study of drawings particularly in terms of activity level of figures, activities between figures, facial expression, direction of figures, barriers, content, order of peers, number of peers, missing figures, folded compartmentalization, lining on the bottom, underlining individual figures, lack of interest (self), empty space, water present, figures portrayed as dominant or powerful, presence lights, presence of weapons or other harmful objects, power symbols, exaggerated size of figures, transparent figures, figures representing sexuality or seductiveness, zipper drawn, belt emphasized, akinesis, poor integration, extremities cut off, animal or monster like appearance of figures, mechanical appearance of figures, pathology, degree of dominance, degree of defensiveness and degree of negetive self concept.

In summary, the results of this study showed that two groups can be differentiated according to graphic indicators and that qualitative analysis can reveal potential trends in drawings that could be clinically important with respect to both individual and group.

### Question #6

The conclusion from the results of this study is that indicators of psychological constructs can be categorized and differentiate groups of children.

The results from the informal raters' questionaire as well as the inter rater reliabilities suggests that the grouping of graphic indicators according to psychological dimensions allowed for a clear, consistent, systematic and organized investigation of the Kinetic School Drawings with respect to all psychological features except for positive and negative self concept, likeability, impulsivity, need for structure and body concerns. Comments from the raters and further inspection by the investigator suggests that these features need to be less ambiguous in order for reliable and accurate judgement to occur.

The results from this study showed that significantly more drawings for non learning disabled children showed evidence of structure than drawings from learning disabled children and that more NLDs were rated as likeable compared to LDs. Furthermore, results from the rating scale showed more moderate or maximum indication of depression, sexual concerns, school problems, impulsivity and competition in drawings by LDs than in drawings by NLDs. Although not significant, both groups differed in terms of degree of indication with regards to positive self concept isolation, anxiety, aggression and body concerns.

Generally, these results suggest that rating the drawings according to the rating scale both quantitatively and qualitatively differentiated the two groups of students with respect to varying degrees of evidence (for example minimal significance, moderate significance and maximum significance). Additionally, the results from the rating scale showed a tendency for most drawings to be rated as showing no evidence to moderate degree of evidence compared to moderate to maximum degrees of evidence. This trend seems to reflect the opinion of many experts and researchers (Burns and Kaufman, 1972, Dileo, 1983) that drawings contain many types of indicators with varying degrees of significance and that one should only expect to see highly significant indicators in drawings produced by children with severe social emotional problems.

In summary, the results from the rating scale used in this study suggest that children draw schoolpictures that contain a varietyof indicators of maladjustment and that this should probably be expected, however, childrens' drawings seem to be able to be differentiated in terms of type and significance of indication.

### K. Limitations of the study

It is important to view many of the findings so far discussed in light of the several limitations of this study. First, all the subjects in this study were grade five students with an age of nine years nine months (9 yrs, 9 months) to twelve years six months (12 yrs, 6 months) and were sampled from one school jurisdiction, hence, generalization should not be made to other groups and beyond this grade and age limit. Second, it was assumed that the sampling procedures in the research design allowed for sufficient control of intelligence, achievement, race and class, however, this study did not provide information about their possible effect upon the KSD productions. Third, this study compared the drawings of learning disabled children with non learning disabled children, hence, generalizations made to other types of children such as the mentally handicapped and behaviourally disturbed should not be done. Fourth, although there were boys and girls in this study (55 boys, 41 girls) there was a disproportionate ratio of sex within and between the groups. The learning disabled group had significantly more boys and the non learning disabled group had significantly more girls. Since sex was not controlled as a factor, this study did not yield any information about the possible effect of sex on KSDs and therefore generalization in terms of sex is not adviseable. Fifth, the results of this study appear to support the diagnostic utility of KSDs, however, further investigation using the instruments in this study with more drawings and different groups of children needs to be conducted to collaborate the diagnostic utility. For example, although the results from this study suggest that the investigative instruments allowed for dependable and consistent ratings, this study did not provide information with regards to whether the measures obtained from the instruments reflect true measures of the properties measured and how much error there is in the instruments. Additionally, for the purposes of this study a rating guide and rating system was developed for global the investigation of drawing. For some personality demensions such as pathology and likeability (see Scoring Sheet Part 2) graphic indicators were collected from the literature (clinical and experimental) and grouped by association to these demensions. In terms of these demensions, the raters considered them present in the drawings of the associated indicators were by in large contained in the drawings. For the remaining personality demensions such as depression and anxiety a rating scale was developed which seperated the indicators in terms of degree of significance (minimal, moderate, maximum) in accordance with clinical and experimental support. The results from this study refered to the personality demensions, however, the association of the graphic indicators to these demensions need to be based on much more verifyable criteria. The relationship between the graphic indicators and personality demensions used in this study needs to be validated with further research. Hence, when results of this study revealed that for example, learning disabled children showed a maximum degree of impulsivity or that non learning disabled children showed more evidence of structure the results indicated that learning disabled children drew pictures that contained highly significant graphic indicators noted by experts and researchers to be represented by impulsive children in drawings and non learning disabled children drew more content in their drawings which has been associated with children who need structure in their school environment. Therefore, the results of this study does not suggest that if indicators are revealed the associated demension is necessarily the cause.

Sixth, the kinetic school drawings were group administered in this study. Hence, individual teachers provided instructions to their students as a group and collected the drawings for the investigator. Eventhough all the teachers were provided with written and verbal instructions there was no monitoring of their presentation and possible assisstance to their students. Therefore, it is possible that while each student did an individual drawing some of the students may have received varying amounts and types of assistance and some students may have been influenced by their classmates.

Seventh, the children in this study were not given any reasons for why they were doing the drawing task, hence, it is possible that the quality of the drawings varied due to different motivational levels. Eighth, group administration did not allow for comparing childrens' drawings with respect to student performance, hence, many areas considered to be critically important when examining drawings (Hammer, 1958, Raven, 1951) were not assessed, for example, how the child used his/her paper, how did he use his time, how does he draw, does he enjoy drawing, where is the childs' interest in his drawing, what is the childs' attitude about his drawing and what interpretation does the child give of his drawing.

Finally, the heterogeneous nature of both groups in this study particularly in terms of personality characteristics may have contaminated the exact nature of the relationship between the variables and group and made many of the quantitative and qualitative conclusions speculative at best. The results of future research needs to address these concerns and further resolve some of the concerns related to projective hypotheses, techniques and experimental design.

In light of the above limitations, the general conclusion from the results of this study is that the aims of the study were achieved. This study was meant to be the initiation of a process towards making the KSD more applicable to its' user. The results from this study supplement the pre existing, however, sparse normative data. More important, a systematic approach was developed for examining kinetic school drawings in relation to both individual and group comparisons. The scoring sheets and guides could be used and modified in future clinical and experimental endeavours by both beginning investigators and those who have more knowledge and experience. These instruments may provide a more standardized approach in terms of administration, scoring and interpretation that could lead to more psychometrically valid and reliable information with respect to projective school drawings.

## L. Delimitations and Implications

A major implication of this study is that the results from this study can be used to further develop a guide that may further assist the clinical investigator of projective school drawings particularly in terms of those produced by non learning disabled children and learning disabled children as well as be used a reference for further experimental investigation with similar or different groups of children .

Future investigators of the KSD should address themselves to demonstrating the reliability and validity of measuring instruments such as the ones used in this study to discover whether the indicators grouped with respect to personality and behavioral characteristics actually relate to these variables such as depression, anxiety and withdrawal. Extensive investigation of this issue would greatly enhance the overall understanding of the KSD in relationship to these variables.

It appears from this study that what children draw in terms of activity is consistent with their written descriptions. Hence, children may have conscious intent in their drawings and content and graphic expressions may be elaborating on this action. As noted by Sims (1979) perhaps kinetic drawings reflect more consious than unconscious perspectives and further use of KSDs and KFDs should focus on the behaviour children express in their drawings in relation with the behavior they display in their social interactions.

The results of this study suggests that rare occurences of graphic representations need to be investigated more closely for possible emotional, intellectual, social, learning or visual motor problems due to the possibility these rare occurences may represent problematic conditions. Essentially, quantitative and qualitative data emerging from this study indicates many individual and group differences can be both clinically and experimentally useful. From the authors' perspective the KSD seems to be a very useful device for assessing childrens' feelings about the school environment and the people they associate with in this environment. It appears that the use of systematic measuring tools can add to the skills and knowledge of the examiner in terms of consistent judgements about the significance of childrens drawings. However, further efforts particularly in terms of developmental studies and the collection of normative data needs to occur before the potential of the KSD is fully realized. Additionally, studies examining whether KSDs reflect state or trait characteristics need to be conducted particularly in terms of longitudinal research designs so the value of KSDs can be more clearly determined.

Perhaps one of the major goals of future research should be to determine whether KSDs can predict the psychological variables refered to in this study. This goal would probably require a multivariate approach with respect to the independence or dependence of the drawing indicators that are considered to reflect these psychological variables. One of the major thrusts of this study was to group indicators according to the psychological variables many researchers and experts suggest they represent and then rank them with respect to their perceived significance. Furture research will need to validate this grouping and determine whether the types of indicators and their associated degree of significance as determined by the review of the literature correlates with other measures of emotional disturbance, maladjustment and conflict.

Another related issue is the question of distinctiveness in groups. In this present study, the two groups were not clearly distinct from one another particularly in terms of psychological functioning. The effects of the heterogenous nature of these groups especially in terms of personality in this study are not known. Learning disabled children in this study were different from the non learning disabled children in terms of academic achievement and eventhough LD children are considered to have secondary emotional difficulties due to their underachievement and associated learning problems, exact differences and commonalities confound the results of this study. Continued research should try to replicate the results of this study through the approach that was used in this study with more clearly differentiated samples of children.

One of the major findings of this study was that the scoring instruments appeared to be much more sensitive to the degrees of difference in childrens' drawings than methods used in other studies that primarily rated drawings in terms of absence or presence of a characteristic (Schneider, 1977). Hence, more research using this study's rating instruments or similar instruments that address degrees of difference seems appropriate.

This researcher anticipates further research that makes more use of self reports along with drawing tasks. The children's written comments on their drawings seemed to provide both further and consistent information about how the child views himself/herself with respect to interactions with others and their perceptions of what school means to them, hence, self reports would seem to be advantageous as validating criterion.

This researcher also anticipates more research that utilizes an individually administered approach rather than the group administered approach. As Schneider (1977) notes "it may be fruitful to view the drawing as a communication between two people, not merely a response to a disembodied set of instructions" (pg. 50). This view seems appropriate due to the opinions by many individuals (Hammer, 1958, Raven, 1951) that more important diagnostic information is obtained if the examiner not only looks at the child's graphic product but also at how the child produced the product. Essentially, through observation and rapport an examiner can be supplied with more complete and informative data about what the drawing represents for each child.

At some point, this investigator envisages the information gained from KSD research to be used by classroom teachers as a screening method. Teachers are in contact with students' art almost daily, hence, much more practical use of significant graphic information could be done by teachers who might be able to spot symptoms of child maladjustment within the school environment from drawing produced by these children. In any event, the usefulness of kinetic school drawings depends on whether future investigators address themselves to the various issues and problems raised in the preceding sections.

Finally, two major areas need to be developed if projective assessment particularly with drawings is going to be continued in the future. One area is the development of a projective theory and the other is the development of generalized interpretative methodology.

The general theory underlying projection is that the way a person is organized psychologically will determine the content and style of the persons' perceptions which can be reflected by the responses provided through such devices as the kinetic school drawing. Projective techniques are assumed to allow for more unique aspects of an individuals' personality due to their unstructured, disguised and holistic nature (Maloney and Ward, 1980) and their ability to tap latent or unconscious processes (Hammer, 1958). Eventhough the principles of projection has been explained by a variety of suppositions such as stimulus response theory, psychoanalytic theory, perceptual theory, gestalt theory and physiognomic theory these areas have concerned themselves more with behavoir, motivation, personality development, perception, visual conceiving, maturation, learning and motor activity than about the relationship between personality and projection. Hence, as Lindsey notes (1961) projectives need a unifying theory. A theory that integrates all of the suppositions into a "projective psychology" (Apt, 1950) and which is derived from the clinical and experimental use of projective techniques.

To date, the clinician needs to depend on his/her experience as well as the information derived from existing psychological theories as a basis for projective testing and interpretation. However, the information does provide a framework from which the clinician can use when approaching the interpretation of projective techniques such as the kinetic school drawing.

As noted earlier, a purpose of this study was to initiate a process towards making the KSD more applicable to future users of the KSD. The major focus was in developing a systematic approach for investigating school drawings and to ascertain whether this approach could be consistently used in finding out what children drew in their school pictures. Additionally, this study wanted to discover whether children differed in their graphic productions and whether the styles, expressions, content, actions, individual and global characteristics corresponded with the expectations of notable experts and researchers in the field of projective drawings. The results of this study did provide information with regards to these items, however, many of the conclusions based on these results indicated a need for validation. Future research needs to validate these results in relationship to a more integrated projective theory so that more experimental support can be established for a technique that appears to have tremendous clinical utility.

For now, the results from this study can serve as a reference guide for scoring and interpreting kinetic school drawings, but only with careful consideration of this studys' limitations. Another implication of this study is that a systematic examination of projective responses is only the first step towards interpretation. The next step involves the examination of a variety of other factors that are both directly and indirectly related to projective responses such as a drawing production.

## M. Interpretation

The interpretation of drawings requires the examination of many variables that were not included in this study such as from other forms of personality measurement, interview and observation data, behavioral indices, developmental characteristics and reports from significant others. The limitations of this study can be utilized by other researchers in order that a more comprehensive examination of the significance of projective school drawings can be conducted.

First, this investigator envisages the use of clinical case studies as the most suitable approach for examining the inter relationship of these factors. The accumulated results from these studies can then be used as abasis for empirical research.

In light of the above recommendation, future research should attempt to assess and interpret projective drawings from a multilevel framework. This framework would involve the assessment of the individual by the use of self reports, reports from significant others, objective tests and projective tests including the KSD. Interpretation would involve the inter relationship of these results with background information (age, grade, health, family history, sex, etc) developmental characteristics, cognitive functioning and observational data. Essentially, projective material becomes most meaningful when viewed within the context of other sources of information.

When projective material is integrated with behavioral and objective information interpretation and prediction may be more justified and reliable. As noted by Klopfer (1981) "it seems a great mistake to use projective data and other data as equivalent to one another and to be interested only in similarities rather than disparities ...... the differences between results of projective tests and other sources of information are likely to be ones of crucial infromation which a clinical study can be based" (pg. 254).

In summary, projective assessment and interpretation needs to be conducted in a systematic manner so that the clinical case study is fully exploited. I t requires the utilization of objective and behavioral measures in order that the individuals interpersonal behavior as reported by himself and others can be compared to his conscious and unconscious needs, motives and desires so that more accurate judgements can be made regarding his psychological state.

## N. Conclusions

The purpose of the current study was to contribute to the process of making the KSD more applicable to school psychologists and clinicians. Related to this purpose were the following aims: (1) to develop a systematic approach for examining drawings in a consistent fashion which could be used both clinically and experimentally, (2) to ascertain what children typically draw when given a KSD task, (3) to discover whether graphic indicators noted by experts as being significantly related to maladjustment are represented in school drawings, (4) to find out if two groups of school children could be differentiated with respect to graphic representations, (5) to provide further normative information with respect to the KSD and (6) to discover whether drawings could be differentiated according to the type of degree of graphic significance.

The results of this study, taken as a whole, succeeded in accomplishing its' purpose and related aims. Based on the results of this study the KSD can be considered to be a useful instrument.

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# APPENDIX A

## Instructions for Group Administration

## Of The Kinetic School Drawing

**General Instructions**

1. Provide each student with a pencil and a sheet of plain, white 8 1/2" x 11" paper.
2. Read the following instructions to the students:

   "I'd like you to draw a school picture. Put yourself, your teacher and a friend or two in the picture. Make everyone doing something. Try to draw whole people and make the best drawing you can. Remember, draw yourself, your teacher and a friend or two and make everybody doing something.
3. After the students have completed the drawings, they are asked to identify each figure (ex. "me", "teacher") and to describe the actions of the figures (ex. What is everybody doing?). The administrator can help the students label their drawings if assistance is needed. Additionally, students are asked to order the sequence of drawn figures.
4. There is no time limit, however, the drawings can usually be obtained in less than 10 minutes and labeled in less than 2 minutes.
5. After the drawings have been completed and labeled make sure all the identifying information has been done while collecting them from the students.
6. While collecting each drawing, indicate on the back of the drawing the following:

| | | | |
|---|---|---|---|
| (a) | Age of the student | example | 11 years, 2 months |
| (b) | Sex of the student | example | M (for male), F (for female) |
| (c) | Grade | example | 5 |
| (d) | Classification | example | N (for non learning disabled)<br>LD (for learning disabled) |

# APPENDIX B

## SCORING SHEET PART 1

DRAWING NUMBER_______

### DESCRIPTIVE DIMENSION

**Activity Level:**

| FIGURE | ACTIVITY |
|---|---|
| Self | ____________________ |
| Teacher | ____________________ |
| Peer #1 | ____________________ |
| Peer #2 | ____________________ |
| Peer #3 | ____________________ |
| Peer #4 | ____________________ |

**Activity Between Individual Figures**

| FIGURES | ACTIVITY |
|---|---|
| Self/Teacher | ____________________ |
| Self/Peers | ____________________ |

**Location of Self:**
(a) isolated
(b) Next to teacher
(c) Beside peer(s)

**Facial Expression**

| Expression | Self | Teacher | Peer#1 | Peer#2 | Peer#3 |
|---|---|---|---|---|---|
| Very Friendly | | | | | |
| Friendly | | | | | |
| Neutral | | | | | |
| Unfriendly | | | | | |

**Direction of Figures**

| Figure | Facing out of Drawing | Facing away from major figures | Facing into drawing | Facing major figures |
|---|---|---|---|---|
| Self | | | | |
| Teacher | | | | |
| Peer#1 | | | | |
| Peer#2 | | | | |
| Peer#3 | | | | |
| Peer#4 | | | | |

**Barriers Between Figures**

| Figures | Barriers |
|---|---|
| Self/Teacher | ____________________ |
| Teacher/Peers | ____________________ |
| Self/Peers | ____________________ |

List Content In Drawing

| | | | | |
|---|---|---|---|---|
| ____ | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |
| ____ | ____ | ____ | ____ | ____ |

Continuous Dimension

Distance of Self from: Teacher(cm) ____________
Peer#1(cm) ____________
Peer#2(cm) ____________
Peer#3(cm) ____________
Peer#4(cm) ____________

Height of: Self(cm) ____________
Teacher(cm) ____________
Peer#1 ____________
Peer#2 ____________
Peer#3 ____________
Peer#4 ____________

Number of Peers Present ____________

Order of Figures drawn: self _____, peers _____, teacher _____

Dichotomous Dimension

| Dimension | Response | |
|---|---|---|
| Teacher missing | YES | NO |
| Self missing | YES | NO |
| Peers missing | YES | NO |
| Compartmentalization | YES | NO |
| Edging | YES | NO |
| Encapsulation | YES | NO |
| Folded Compartmentalization | YES | NO |
| Lining on the bottom | YES | NO |
| Lining at the top | YES | NO |
| Underlining Individual Figure | YES | NO |
| Birds Eye View | YES | NO |
| Self Turned Away From Teacher | YES | NO |
| Self Turned Away From Peers | YES | NO |
| Figure Rotated (45°) | YES | NO |
| Everyone doing different activity | YES | NO |
| Passive activity(self) | YES | NO |
| Passive activity (teacher) | YES | NO |
| Passive activity (peers) | YES | NO |
| Evidence of withdrawal (self) | YES | NO |
| Lack of interest (self) | YES | NO |

| | | |
|---|---|---|
| Lack of energy(self) | YES | NO |
| Sense of hopelessness (self) | YES | NO |
| Empty space | YES | NO |
| Representation of depression(self) | YES | NO |
| Uninvolvement(self) | YES | NO |
| No face(self) | YES | NO |
| No face (teacher) | YES | NO |
| No face (peers) | YES | NO |
| Light,wavering lines | YES | NO |
| water present | YES | NO |
| Small self figure drawn | YES | NO |
| Figures drawn with much detail or effort | YES | NO |
| Figures portrayed as dominating or powerful | YES | NO |
| Excessive shading | YES | NO |
| Scribbling | YES | NO |
| Cross-hatching | YES | NO |
| Barriers between figures(other than lines) | YES | NO |
| X's present | YES | NO |
| Figure(s) in dangerous position | YES | NO |
| Missing essential body parts (self) | YES | NO |
| Missing essential body parts (teacher) | YES | NO |
| Missing essential body parts (peers) | YES | NO |
| Figures on back of page | YES | NO |
| Erasures | YES | NO |
| Repetition of objects | YES | NO |
| Exaggerated size of body parts | YES | NO |
| Hanging figures | YES | NO |
| Anchoring | YES | NO |
| Edged placement of figures | YES | NO |
| Buttons drawn | YES | NO |
| Light,broken or uneven line quality | YES | NO |
| Arm extensions | YES | NO |
| Precense of lights | YES | NO |
| Tiny feet | YES | NO |
| Hostility or anger between figures | YES | NO |
| Cutting activities | YES | NO |
| Precense of weapons or other harmful objects | YES | NO |
| Teeth | YES | NO |
| Heavy line quality | YES | NO |
| Jagged or sharp fingers/toes | YES | NO |
| Visible action or verbal description of: | YES | NO |
| hitting,yelling,screaming,throwing,etc.. | YES | NO |
| Ballplaying alone(self) | YES | NO |
| Ballplaying(self) with others | YES | NO |
| Evidence of competition | YES | NO |
| Precense of sporting equipment | YES | NO |
| A's present | YES | NO |
| Representation of achievement (ex."Goodwork") | YES | NO |
| Elevated figures | YES | NO |
| Power symbols | YES | NO |
| Exaggerated size of figure(s) | YES | NO |
| Muscular features | YES | NO |

| | | |
|---|---|---|
| Phallic symbols | YES | NO |
| Figures lacking clothes | YES | NO |
| Transparent figures | YES | NO |
| figures representing sexuality or seductiveness | YES | NO |
| Breast emphasis | YES | NO |
| Zipper drawn | YES | NO |
| Belt emphasized | YES | NO |

| | | |
|---|---|---|
| Evasions | YES | NO |
| Akinesis | YES | NO |

| | | |
|---|---|---|
| Self close to teacher | YES | NO |
| Self close to peers | YES | NO |
| Everyone doing related activities | YES | NO |
| Self smiling | YES | NO |
| Teacher smiling | YES | NO |
| Peer(s) smiling | YES | NO |

| | | |
|---|---|---|
| Poor integration | YES | NO |
| Overworked lines | YES | NO |
| Broken,uneven lines | YES | NO |
| Perseveration | YES | NO |
| Lack of detail | YES | NO |
| Simple composition | YES | NO |
| Self figure left of axis | YES | NO |
| Self figure right of axis | YES | NO |
| Self figure top of axis | YES | NO |
| Self figure bottom of axis | YES | NO |

| | | |
|---|---|---|
| Excessive shading of body area | YES | NO |
| Numerous erasures on body | YES | NO |
| Exaggeration of body part | YES | NO |
| Part of body covered up(self) | YES | NO |
| Part of body covered up(teacher) | YES | NO |
| Part of body covered up(Peer(s)) | YES | NO |
| Hands hidden(self) | YES | NO |
| Hands hidden(teacher) | YES | NO |
| Hands hidden(peer(s)) | YES | NO |
| Extremity cut off by paper(self) | YES | NO |
| Extremity cut off by paper(teacher) | YES | NO |
| Extremity cut off by paper(peer(s)) | YES | NO |
| Animal or monster like appearance of figure(s) | YES | NO |
| Mechanical appearance of figure(s) | YES | NO |
| Large head(self)(1/3 of total body) | YES | NO |

# APPENDIX C

SCORING SHEET PART 2 DRAWING NUMBER ____________

GLOBAL DEMENSION

| | | | |
|---|---|---|---|
| Drawing suggests pathology | YES | NO | UNCERTAIN |
| Drawing suggests positive self concept | YES | NO | UNCERTAIN |
| Emphasis on structure | YES | NO | UNCERTAIN |
| Drawer is likeable | YES | NO | UNCERTAIN |
| Visible action agrees with verbal description | YES | NO | UNCERTAIN |
| Visible action and/or verbal description appears strange or unexpected | YES | NO | UNCERTAIN |
| Self or other figures are highly distorted such that without verbal description it would not be recognizable | YES | NO | UNCERTAIN |

Activity of child is: POSITIVE NEUTRAL NEGATIVE UNCERTAIN

ACTIVITY of child is: SIMILAR TO PEERS DISSIMILAR TO PEERS UNCERTAIN

Activity of teacher is: POSITIVE NEUTRAL NEGATIVE UNCERTAIN

Problems indicated in student/teacher relationship: YES NO UNCERTAIN

Self and peers engaged in activities that are: POSITIVE
NEUTRAL
NEGATIVE
UNCERTAIN

Problems indicated in peer relationship: YES NO UNCERTAIN

Self placement is: (1) within school
(2) outside school
(3) uncertain

Self behavior is: (1) desireable
(2) undesireable
(3) uncertain

Self engaged in: (1) academic behavior
(2) non academic behavior
(3) uncertain

Drawing indicates: (1) Depression
(2) Isolation/Rejection
(3) Anxiety/Conflict
(4) Aggression
(5) Sexual concerns
(6) Dominance/Power
(7) Defensiveness
(8) Support/Acceptance
(9) Impulsivity
(10) School Problems
(11) Insecurity
(12) Competition
(13) Body Concerns
(14) Negative Self Concept

# APPENDIX D

## Reference Guide For The Kinetic School Drawing

| Feature | Possible Indicators |
|---|---|
| Isolation/Rejection | Compartmentalization |
| | Encapsulation |
| | Separation of self from group |
| | Self turned away from rest of family/peers/teach |
| | Self absent from picture |
| | Omission of significant- |
| | Others |
| | Rotation of figure |
| | Bird's Eye View |
| | Everyone doing a different activity |
| Depression | Passive activity |
| | Evidence of withdrawal from significant others |
| | Lack of interest in environment |
| | Lack of energy "field of force" |
| | Sense of hopelessness |
| | Empty space |
| | Graphic representation (ex., crying, hurting) |
| | Uninvolvement |
| | No face |
| | Small figure drawn at or near lower edge, light, wavering lines water theme |
| Anxiety/Conflict | Figure(s) drawn with much detail and/or effort |
| | Figure(s) portrayed as dominating or powerful |
| | Excessive shading |
| | Scribbling |
| | Cross-hatching |
| | Barriers between figures other than lines(objects |
| | X's |
| | Figures in dangerous position through visible or verbal description indicating tension or turmoil |
| | Lining at the top of the page (clouds) |
| | Missing essential body parts of self (head, trunk, arms, legs, feet, hands, fingers, eyes, nose; or mouth) |
| | Missing essential body parts of significant other |
| | Figures or drawings on back of the page |
| | Erasures |
| | Repetition of objects |
| | Exaggerated size of body parts |
| | Hanging figures |
| Insecurity/Dependence | Anchoring (drawing of all figures within one inch of a single edge of the paper) |
| | Excessive attention to details |
| | Buttons drawn light, broken, or uneven line |
| | Edged placement of figures (drawing of all figure on two or more edges of the paper |
| | Underlining of individual figures |
| | Arm extensions |
| | Presence of lights |
| | Tiny feet |

| | |
|---|---|
| Aggression | Competitiveness between figures indicating assault<br>Hostility, anger or other similar type forces between figures<br>Cutting activities (eg. scissors, lawnmower)<br>Presence of weapons or other harmful objects<br>Presence of spitballs, airplanes, darts<br>Teeth<br>Heavy line quality<br>Jogged or sharp fingers, toes<br>Visible actions or verbal descriptions: hitting, punching, yelling, screaming, throwing, etc. |
| Competition | Ballplaying: either alone or with another figure<br>Evidence of competition<br>Presence of sporting equipment<br>"A"s<br>Representation of achievement |
| Dominance/Power | Elevated figures<br>Presence of power symbols (car, motorcycle)<br>Exaggerated size of figure<br>Muscular features |
| Sexual Concerns | Phallic symbols<br>Figures lacking clothes<br>Transparent figures<br>Figures possessing sexuality or seductiveness<br>Genitals drawn<br>Breast emphasis<br>Zipper drawn<br>Belt emphasized |
| Defensiveness | Evasions: one or more but not all drawings depicting stick figures<br>Akinesis: motionless or stick figures |
| Support/Acceptance | Closeness to significant others<br>Everyone doing related activities<br>Absence of negative signs<br>Verbal descriptions indicating warmth<br>Smiling |
| Impulsivity | Failure to integrate aspects of drawing<br>Overworked lines<br>Broken, uneven or unsteady lines<br>Perseveration<br>Lack of detail<br>Simple composition<br>Self figure to left of mid axis |
| Body Concerns | Poor integration of body parts<br>Excessive shading of body area<br>Omission of body parts (head, trunk, arms, leg, feet, hands, fingers, eyes, ears, nose or mouth) |

| | |
|---|---|
| | Numerous erasures on body |
| | Exaggerating of any body part |
| | Figures drawn with part of body covered up in any manner |
| | Hands hidden |
| | Extremity cut off by piece of paper |
| | One figure larger than the rest (at least twice as large as other figures) |
| | One figure smaller than the rest (at least half as small as other figures) |
| | Animal or monster like appearance of figure(s) |
| | Stick figures |
| | Mechanical appearance of figure(s) |
| | Small head (less than 1/10 of total body) |
| | Large head (greater than 1/3 of total body length |
| Pathology | Diffuse |
| | Disorganized |
| | Poor drawing |
| | Confused or distorted body image |
| | Overwhelming anxiety |
| | Extensive overemphasis on some features to the neglect of others |
| | Grotesque fantasy |
| | Mood unpeaceful |
| | Unpleasant affect |
| | Bizarre, grostesque features |
| | Failure to produce unitary features |
| | Darkened sun, clouds |
| | Rain/water |
| Negative Self-Concept | Tiny figure |
| | Omissions of self barriers between self and significant others |
| | Self drawn last |
| | Self separated from significant others |
| | Facing away from significant others |
| | Facing into the picture |
| | No face |
| Generally Non-Pathologic | Well organized |
| | Well controlled |
| | Resourceful |
| | Purposeful |
| | Ability to cope |
| | Withdrawing task |
| | No evidence major disturbance |
| | Peaceful mood |
| | Pleasant effect |
| | Absence of bizarre or grotesque features |
| | Presence of sun |
| Emphasis on Structure (KSD) | Clocks |
| | Chalkboard |
| | Alphabet or handwriting |
| | Models |
| | Flags |
| | Public Address |
| | Systems |

| | |
|---|---|
| Difficulties in School (KSD) | Pictures of recess<br>Gym activities - outside rather than inside<br>Non academic involvement<br>Showing oneself in trouble<br>Doing badly on school activity |

**Psychological Integrity**

1. Visible action agrees with verbal description?
2. Visible actions or verbal descriptions strange or unexpected.
3. Self or other figures highly distorted such that without verbal descriptions it would be not recognized.

| | |
|---|---|
| Positive Self-Concept | Self part of group doing related activities<br>Self figure drawn first<br>Self-figure facing out of drawing<br>Self-figure facing other figures<br>Smiling |
| Likeable | organized<br>socially oriented<br>relatively docile<br>generally agreeable |
| Not Likeable | unorganized<br>overanxious<br>hostile<br>extreme in any characteristic<br>uncertain |
| Positive Activity | Socially acceptable<br>No evidence of mal intentions<br>professional / student related<br>pleasing |
| Problems in Relationship | Unacceptable behavior<br>Unpleasing reactions<br>Evidence of concern<br>Negative interactions<br>Evidence of conflict |
| Placement within School | Anywhere inside school building |
| Placement outside School | Anywhere outside school building |
| Academic Behavior | Any activity related to school curriculum |
| Non Academic Behavior | Any activity not associated with school curriculum |

# APPENDIX E

## SCORING GUIDE PART 2

| RATING SCALE: | | |
|---|---|---|
| | STRONGLY INDICATED | 3 |
| | MODERATELY INDICATED | 2 |
| | MINIMALLY INDICATED | 1 |
| | NOT INDICATED | 0 |

| FEATURE | INDICATOR | SCALING |
|---|---|---|
| DEPRESSION | No face | 3 |
| | Graphic representation of crying, hurting and/or verbal representation | 3 |
| | Water theme | 3 |
| | Evidence of withdrawal from significant others | 2 |
| | Lack of interest in enviroment | 2 |
| | Lack of energy "field of force" | 2 |
| | Uninvolvement | 2 |
| | Sense of hopelessness | 2 |
| | Empty Space | 1 |
| | Small figure(self) drawn at or near lower edge | 1 |
| | Light-wavering lines | 1 |
| | Passive activity | 1 |
| ISOLATION/REJECTION | Compartmentalization | 3 |
| | Encapsulation | 3 |
| | Separation of self from group | 3 |
| | Self absent from picture | 3 |
| | Birds' Eye view | 3 |
| | Self turned away from significant others | 2 |
| | Omission of significant others | 2 |
| | Rotation of figure | 1 |
| | Everyone doing different activity | 1 |
| ANXIETY/CONFLICT | Excessive shading(self/others) | 3 |
| | Cross-Hatching | 3 |
| | Barriers between figures | 3 |
| | X's | 3 |
| | Erasures (self/others) | 3 |
| | Hanging figures | 3 |
| | Figures on back of page | 3 |
| | Figures in dangerous position | 3 |
| | Figures drawn with much detail, effort | 2 |
| | Figures portrayed as dominating/powerful | 2 |
| | Repetition of objects | 2 |
| | Exaggerated size of body parts | 2 |
| | Lining at top of page | 2 |
| | Missing essential body parts (self) | 1 |
| | Missing essential body parts (others) | 1 |
| | Scribbling | 1 |

| | | |
|---|---|---|
| AGGRESSION | Competetiveness between individuals | 3 |
| | Hostility between figures (visual/verbal) | 3 |
| | Precense of weapons or other harmful objects | 3 |
| | Precense of spitballs,airplanes,darts | 3 |
| | Cutting activities | 2 |
| | Heavy line quality | 2 |
| | Teeth | 2 |
| | Jagged or sharp fingers/toes | 1 |
| SEXUAL CONCERNS | Transparent figures | 3 |
| | Genitals drawn | 3 |
| | Figures possessing sexuality or seductiveness | 2 |
| | Figures lacking clothes | 1 |
| | Breast emphasis | 1 |
| | Zipper drawn | 1 |
| | Belt emphasized | 1 |
| | Phallic symbols | 1 |
| DOMINANCE/POWER | Precence of power symbols | 3 |
| | Elevated figures | 3 |
| | Muscular features | 2 |
| | Exaggerated size of self | 2 |
| DEFENSIVENESS | Evasions | 3 |
| | Akinesis | 2 |
| SUPPORT/ACCEPTANCE | Closeness to significant others | 3 |
| | Comments indicating warmth/approval ("hi", "Good Work") | 3 |
| | Smiling | 2 |
| | Everyone doing related activities | 2 |
| | Precense of lights | 1 |
| | Absence of negative signs | 1 |
| IMPULSIVITY | Failure to integrate aspects of drawings | 3 |
| | Simple composition | 3 |
| | Lack of detail | 3 |
| | Overworked lines | 2 |
| | Broken,uneven,unsteady lines | 2 |
| | Perseveration | 1 |
| | Self figure left of mid-axis | 1 |

| | | |
|---|---|---|
| DIFFICULTIES IN SCHOOL | Non-academic involvement | 3 |
| | Showing self in trouble | 3 |
| | Doing badly in school activity | 3 |
| | Fighting | 3 |
| | Spitballs,airplanes,darts,etc. | 3 |
| | Outside rather then inside activity | 2 |
| | Backview of self | 2 |
| | Showing sadness | 2 |
| | Showing anger | 2 |
| | Teeth | 2 |
| | Self at left of mid-axis | 1 |
| INSECURITY/DEPENDENCE | Anchoring | 3 |
| | Edging | 3 |
| | Underlining individual figures | 3 |
| | Arm Extensions | 2 |
| | Excessive attention to detail | 2 |
| | Light,broken,uneven, line quality | 2 |
| | Precense of lights | 1 |
| | Tiny feet | 1 |
| | Buttons drawn | 1 |
| | Self above mid-axis | 1 |
| COMPETITION | Evidence of competition | 3 |
| | Representation of achievement | 3 |
| | A's | 2 |
| | Precense of sporting equipment | 2 |
| | Ballplaying | 1 |
| BODY CONCERNS | Excessive shading of body part | 3 |
| | Numerous erasures on body | 3 |
| | Figures drawn with part of body covered up | 3 |
| | Animal or monster like appearance | 3 |
| | Mechanical appearance | 3 |
| | Exaggeration of body part | 2 |
| | Poor integration of body parts | 2 |
| | Omission of body parts | 1 |
| | Hands hidden | 1 |
| | Extremity cut off by piece of paper | 1 |
| | One figure larger than rest | 1 |
| | One figure smaller than rest | 1 |
| | Stick figures | 1 |
| | Small head | 1 |
| | Large head | 1 |

| | | |
|---|---|---|
| NEGATIVE SELF CONCEPT | Omission of self | 3 |
| | Self separated from significant others | 3 |
| | No face | 3 |
| | Self drawn last | 2 |
| | Self facing into picture | 2 |
| | Barriers between self and others | 2 |
| | Facing away from other figures | 2 |
| | Tiny self figure | 1 |

# APPENDIX F

## Informal Rater Questionaire

(1) In terms of general learning experience, the training sessions and rating assignment were:

(a) Very Unworthwhile (b) Unworthwhile (c) Worthwhile (d) Very Worthwhile

(2) The directions given during the training sessions were:

(a) Very Unclear (b) Unclear (c) Clear (d) Very Clear

(3) The instructions and presentation related to the use of the scoring sheets, scoring guide and reference guide were:

(a) Very Unorganized (b) Unorganized (c) Organized (d) Very Organized

(4) Generally, the amount of time spent rating the (48) drawings using Scoring Sheet Part 1 was:

(a) Less than 10 hours (b) Between 10-15 hours (c) Between 15-20 hours (d) Between 20-25 hours (e) Over 25 hrs.

(5) Generally, the amount of time spent rating the (48) drawings using Scoring Sheet Part 2 was:

(a) Less than 10 hours (b) Between 10-15 hours (c) Between 15-20 hours (d) Between 20-25 hours (e) Over 25 hrs.

(6) Please indicate whether or not rating the drawings using Scoring Sheet Part 1 helped you in rating the drawings using Scoring Sheet Part 2 and give a brief reason for your answer.

(a) YES : WHY?

(b) NO : WHY?

(7) Please list the items/categories you had difficulty rating along with a brief account for this difficulty.

(8) Please provide further comments related to the rating exercise.